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11-85

THE REGIONAL IMPACT OF TRANSMIGRATION

by
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Prepared for the World Bank

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THE REGIONAL IMPACT OF TRANSMIGRATION*

Introduction

Transmigration, the planned resettlement of households from the densely-settled islands of Java and Bali to sparsely-populated areas elsewhere, has among its several objectives the promotion of regional development in the outer islands of the Indonesian archipelago. Started in colonial times at the beginning of the century and continuing into the present day, it now ranks as the largest publicly planned resettlement program in the world. Until the end of Repelita II, however, the small numbers of transmigrants relative to both sending and receiving region populations suggested that the regional impact of transmigration was also modest. During this same period the more general dynamics of development of Indonesia's outer islands centered around capital-intensive, resource-based activities, particularly oil and timber extraction and related large-scale industrial projects, which overshadowed and were separated in concept and planning from the food production, agricultural subsistence model of transmigration. At best, transmigration could be seen as a long-term effort to increase the manpower base of the outer islands while at the same time ensuring that support for the production of basic food supplies on transmigrant farms would avoid the emergence of the type basic needs level poverty being experienced by land-poor and landless people being recruited for the program from densely-settled regions.

The acceleration of the transmigration program under Repelita III (1979/80-1983/84) and the very large numbers of people moved to the outer islands during this period began to change the view that transmigration could only make a marginal contribution to regional development. During Repelita III the estimated movement of between 1.5 to 2 million people under the transmigration program to outer island provinces not only brought substantial increases to local populations; it also brought unprecedented increases in land-clearing, road construction, public services, and locally expended financial resources. In addition, a number of studies of transmigration sites in recent years have indicated that a substantial number of transmigrants are regularly involved in agricultural wage work and non-agricultural employment outside transmigration sites, potentially indicating that transmigrants are filling, and perhaps generating, grassroots demands for production and employment which are largely undetected in macroeconomic regional accounts.

The purpose of this report is to evaluate the regional impact of transmigration in light of recent changes in the program and findings from surveys related to the economic activities of transmigrants. In addition to an assessment of the impact of changes in the magnitude of the program in terms of people being resettled and infrastructure being allocated, three issues are of overriding concern. One is the extent to which transmigrants have augmented local agricultural production. More specifically, at issue is whether transmigrants have been able to go beyond subsistence production and to fully participate as producers in the regional economy. Within this issue are questions concerning the standard subsistence-food-production farm model of the program, the physical and economic linkages between transmigration sites and the regional and national economy, and supporting institutions designed to promote the direct participation of transmigrants in commercial production and marketing.

*Prepared for the World Bank by Mike Douglass, Department of Urban & Regional Planning, University of Hawaii, November, 1985.

Partly related to the role of transmigrant agricultural production in the region, the second set of issues is related to the impacts generated by transmigrant non-farm employment and consumption expenditures on regional economic development processes. Given the recency of much of transmigration activity -- as much as 80 percent of the Repelita I-III transmigrants have been moved since 1979/80 -- these impacts are difficult to translate into longer-term expectations or projections. Nevertheless, looking beyond the five-to-seven-year period of responsibility of the Ministry of Transmigration to ask what type of potential for regional development is being prepared for through the planned resettlement of several million people in the outer islands remains an outstanding question which has yet to be addressed. Is transmigration likely to generate its own 'engine of growth' in the region, or will it be largely dependent upon economic developments occurring beyond its own sphere? If the latter, how can transmigration be better linked with these developments?

A third set of issues covers the impact of transmigration on local social organization and government. One type of impact is that on local traditional institutions and customs, especially with regard to land-use and environmental management. Another concerns the capacity of local governments to anticipate and absorb the direct and indirect effects of transmigration programs on the region. Among the direct impacts are those associated with the turning over to local governments the task of maintaining infrastructure created through the development of transmigration sites. Indirect impacts include those generated by spontaneous migration into rural and urban areas, and the subsequent rise in demand public goods and services, as a result of large-scale transmigration activities in an area. To the extent that transmigrant search for non-farm employment, they would also include the largely unanticipated impact of transmigrants on regional labor markets.

In addressing these issues, the singularities of particular transmigration sites and regional settings are likely to be as important as generalizations about the transmigration program. Concerning transmigration sites, the variations in land type and quality, the type of crops to be grown, and type of settlement layout (linear versus nucleated) have been found to be closely related to variations in transmigrant household production and income. At a higher geographical scale, the relative location of the site within the region, particularly the distance from and ease of travel to large market towns and inter-regional ports, can help to explain differences between poorer from more economically viable sites. The overall density of the region and pace of its own economic activities also greatly affect the ability of transmigrants to find off-farm and non-agricultural employment. They are also likely to be highly related to variations in income-earning strategies adopted by transmigrants and, in relation to these strategies, to the degree to which transmigrants themselves recruit other workers from their home provinces to the receiving region.

In addressing the issues outlined above, the discussion is divided into five sections below. Section 1 assesses the impact of transmigration on population sizes and increases in receiving provinces. Section 2 evaluates the contribution of transmigration and transmigrants to infrastructural development and regional agricultural production. Section 3 looks at the extent to which transmigrants interact with the regional economy, either through production for the market, non-farm employment, or consumption expenditures. Section 4 discusses the impact of transmigration activities on local planning and traditional socioeconomic institutions. Section 5 concludes with suggestions for more explicit treatment of the regional dimension of development in transmigration planning.

1. Population Impact

Although the increase in regional population through transmigration is perhaps the most straightforward of all the types of impacts which can be measured, there are nevertheless a number of caveats that need to be mentioned at the outset. First, because of a common one to two-year gap between the date targeted for settlement and actual settlement, there are possibilities that transmigrants are sometimes double-counted, especially between Repelitas when targets may be counted as having been realized under two plans. More difficult has been the loose distinction between sponsored, semi-sponsored and spontaneous migrants, the latter of which may not have had any direct relationship with the transmigration program. Especially at the end of Repelita III, the number of spontaneous, or non-sponsored, migrants included within transmigration statistics appears to have been significant.¹

With these reservations in mind, increases in regional populations can be viewed in two ways: (1) distribution of transmigrants among receiving provinces; and (2) impact within provinces in terms of the ratio of transmigrants to the local population. Concerning the first relationship, Table 1 shows the percentage share of transmigrants relative to provincial population shares for the years 1971-80 and 1980-85. Approximately 60 percent of all transmigrants have been sent to Sumatra, which was only slightly more than Sumatra's 55 percent share of the total population of receiving provinces. Within Sumatra, however, proportional shares of transmigrants vis-a-vis provincial population shares show wide differences, with the northern half of Sumatra being highly 'under-represented' and the southern half being 'over-represented' by transmigrants. In fact, four provinces of Sumatra (South Sumatra, Lampung, Jambi and Riau) alone accounted for 50 percent of all transmigrants between the years 1971-1985 and 50 percent of all households under the responsibility of the Ministry of Transmigration in 1985.

Such concentrations have led to the generalization that evaluations of transmigration programs are likely to reflect the (south and southeast) Sumatra experience. Provinces of Kalimantan and Irian Jaya have, however, become more prominent in recent years (while Sulawesi has declined) as transmigration to Sumatra has been curtailed since the end Repelita III. Kalimantan, which accounted for 14 percent of all transmigrants in the 1970s, rapidly increased its share to 22 percent during the Repelita III and early Repelita IV period. Similarly, Irian Jaya increased its share from 1.4 percent in the 1970s to 4.3 percent of the number of transmigrants in the 1980s. To the extent that the regional settings in Kalimantan and Irian Jaya differ substantially in physical, economic and social endowments, this shift represents a fundamental challenge to the program in the coming years.

Although transmigration is, in principle, oriented toward sparsely-populated frontier areas, many outer island provinces are so large that there does not appear to be a strong positive or negative correlation between transmigrant distributions and either provincial population densities or provincial shares of total outer island population. Lampung, for example, has the

¹P. Gardner (1984, p.20) notes that the Repelita III target of 500,000 families, or somewhat more than 2 million people, "was achieved by adding in families who had 'spontaneously' moved to transmigration areas in previous years." The inclusion of spontaneous migrants makes no reference to the time of their arrival. Approximately 100,000 transmigrant households targeted for Repelita III had not been settled by the end of the Repelita III planning period and were carried over to Repelita IV.

TABLE 1 DISTRIBUTION OF PROVINCIAL POPULATION AND TRANSMIGRANTS 1971-1985 (%)

PROVINCE	PROVINCIAL POPULATION			TRANSMIGRANT DISTRIBUTION			
	DISTRIBUTION 1980	DISTRIBUTION 1985	DENSITY' 1980	POPULATION 1971-80	POPULATION 1980-85	HOUSEHOLDS 1971-85	HOUSEHOLDS 1985
ACEH	5.12	5.09	47	1.29	3.48	2.83	3.25
N. SUMATRA	16.39	16.05	118	0.24	2.12	1.56	1.79
W. SUMATRA	6.68	6.42	68	4.68	1.32	2.32	1.40
RIAU	4.25	4.27	23	3.94	10.14	8.30	9.69
JAMBI	2.83	2.98	32	12.91	6.15	8.16	6.34
BENGKULU	1.51	1.61	36	5.61	3.48	4.12	3.28
S. SUMATRA	9.08	9.21	45	19.00	21.61	20.83	21.03
LAMPUNG	9.07	10.34	139	17.93	10.73	12.87	12.30
SUMATRA	54.92	55.96	59	65.61	59.03	60.99	59.08
W. KALIMANTAN	4.87	4.71	17	3.19	7.52	6.23	7.09
C. KALIMANTAN	1.87	1.91	6	1.26	6.26	4.77	6.22
S. KALIMANTAN	4.05	3.88	55	5.51	5.21	5.30	5.62
E. KALIMANTAN	2.39	2.72	6	3.98	3.16	3.41	3.67
KALIMANTAN	13.18	13.22	12	13.95	22.16	19.71	22.59
N. SULAWESI	4.15	4.01	111	1.51	1.07	1.20	0.96
C. SULAWESI	2.53	2.63	18	6.93	4.30	5.09	4.59
S. SULAWESI	11.88	11.12	83	4.91	1.43	2.46	1.45
S.E. SULAWESI	1.85	1.85	34	5.10	5.25	5.21	4.70
SULAWESI	20.41	19.61	55	18.44	12.05	13.95	11.70
MALUKU	2.77	2.75	19	0.58	2.00	1.58	2.12
NTB	5.34	5.17	135	NA	0.39	NA	0.36
E. TIMOR	1.09	1.03	37	NA	0.06	NA	0.07
IRIAN JAYA	2.30	2.26	3	1.43	4.31	3.45	4.07
TOTAL	100.00	100.00	NA	100.00	100.00	100.00	100.00

Sources: for 1971-80: P. Gardner, "Provincial Population Projections" (Jakarta: NUDS Project, UNCHS/GOI, 1985); for 1980-85: Departemen Transmigrasi, Daftar Proyek Transmigrasi yang Dibina Tahun 1985/86 (to August 1985); for households: Dir Jen. Pengerahan dan Peminaan, "Buku Data Usaha Tani" (Jakarta, 1985); provincial population: BPS, Statistik Indonesia 1984. See Appendix A1.

highest density of all transmigrant receiving provinces, but received 13 percent of the total number of transmigrants between 1971 and 1980. Provinces of much larger areal size and lower population shares and densities, such as Central and East Kalimantan, received much lower shares of transmigrants. This reflects both the historical buildup of the program in parts of Sumatra (the first settlement in 1905 was in Lampung) and undoubtedly other factors such as land suitability and the level supporting institutional and physical infrastructure. The pattern of spatial expansion of the program first through areas of Sumatra and, more recently, on toward Kalimantan and Eastern Indonesia, lies partly behind the data in Table 2 showing the relative concentration of transmigration in a few provinces. For these provinces, transmigration has resulted in very substantial population increases within very short time spans. Because of the rapid acceleration of the program under Repelita III, this type of impact has been much larger in the 1980s than in the 1970s.

Columns 4 and 5 of Table 2 (and Figures 1 and 2) indicate that in most provinces, the share at least doubled during the Repelita III period. To 1985, however, the share of transmigrants was no higher than 12 percent in any province, and in most cases it was under 8 percent. As expected, the highest proportions are found in south and southeastern Sumatra, and also in the sparsely populated province of Central Kalimantan and the smaller provinces of Central and Southeast Sulawesi. The more densely populated provinces of North and South Sulawesi show low proportions. Maluku, although having several islands which are virtually uninhabited in the interior, has not been a prime target for transmigration; the ratios are thus low even though the overall population density of Maluku is also quite low.

Although for at least some receiving provinces in the outer islands the ratio of transmigrants to provincial population has been relatively high, it has continued to be modest with regard to the sending regions as a whole. The increases in transmigrants in the 1980s represented an estimated movement of only a little more than 2 percent of the combined population of the provinces of Java and Bali. Whether or not the acceleration of transmigration under Repelita IV will lead to more significant population impacts on the sending provinces is a matter of conjecture. In the short term, the very slow start which has been made toward meeting transmigration targets under Repelita IV suggests that, under falling but still relatively high population growth rates on Java, the impact will not be significantly different in the future. The Government is, however, continuing to plan to meet the original Repelita IV targets of 750,000 households, including an estimated 250,000 spontaneous transmigrant households, which would almost double the impact of the Repelita III period. In the longer term much will depend upon the extent to which transmigrants attract spontaneous migrants. This will itself depend upon the economic successes which sponsored transmigrants enjoy in receiving areas, many of which have only just begun to receive large numbers of settlers. In anticipation of the discussion in section 3, much will, in turn, depend upon regional economic growth factors which are exogenous to the program under current transmigration planning.

Although an important indicator of the level of presence of transmigrants in a given province, the ratio of transmigrant to its population may be less revealing of the impact of transmigration than the rate of change in these proportions; for the rate of change more clearly indicates the pace at which local populations, particularly where wide cultural differences exist, and local administration and planning institutions must absorb and adjust to the many social and economic changes accompanying transmigration. In this regard, Columns 4 and 5 (and Figures 3 and 4) show that, as expected, behind the large increases in population proportions were even larger increases

TABLE 2 TRANSMIGRANTS AS PERCENTAGE OF PROVINCIAL POPULATION, 1971-1985

PROVINCE	TRANSMIGRANTS (1000)			TRANSMIGRANTS AS % POPULATION*				AS % HOUSEHOLDS	
	1971-80 ¹	1980 - 85 ¹¹	1971-85	TOTAL 1980	1985 ¹¹¹	INCREASE 1971-80 1980-85		TOTAL 1983/85**	FARM
ACEH	9.6	61.0	70.6	0.37	2.35	1.59	15.70	2.39	3.39
N. SUMATRA	1.8	37.1	38.9	0.02	0.41	0.10	3.40	0.45	0.73
W. SUMATRA	34.8	23.2	58	1.02	1.53	5.67	6.22	0.8	1.15
RIAU	29.3	177.9	207.2	1.35	8.24	5.56	51.58	8.73	14.11
JAMBI	96.0	107.8	203.8	6.64	11.61	21.82	34.85	8.07	11.30
BENGKULU	41.7	61.1	102.8	5.43	10.86	16.76	34.17	7.93	10.10
S. SUMATERA	141.3	379.0	520.3	3.05	9.59	11.88	47.78	9.50	15.30
LAMPUNG	133.3	188.2	321.5	2.88	5.28	7.21	12.85	5.50	7.02
SUMATRA	487.8	1035.3	1523.1	1.74	4.62	6.77	20.94	4.27	6.34
W. KALIMANTAN	23.7	131.9	155.6	0.95	5.61	5.08	46.22	5.81	7.67
C. KALIMANTAN	9.4	109.8	119.2	0.98	10.61	3.72	64.78	12.22	17.02
S. KALIMANTAN	41.0	91.4	132.4	1.99	5.79	11.22	41.38	4.82	7.28
E. KALIMANTAN	29.6	55.5	85.1	2.43	5.31	6.11	14.42	5.83	13.14
KALIMANTAN	103.7	388.6	492.3	1.54	6.32	6.61	36.63	6.41	9.65
N. SULAWESI	11.2	18.8	30	0.53	1.27	2.82	7.72	0.96	1.38
C. SULAWESI	51.5	75.5	127	3.99	8.19	13.70	29.02	7.39	9.13
S. SULAWESI	36.5	25.0	61.5	0.60	0.94	4.14	5.15	0.51	0.75
S.E. SULAWESI	37.9	92.1	130	4.02	11.91	16.61	61.56	10.36	13.05
SULAWESI	137.1	211.4	348.5	1.32	3.02	7.28	18.56	2.38	3.34
MALUKU	4.3	35.1	39.4	0.30	2.44	1.34	17.01	3.59	4.59
NTB	NA	6.9	NA	NA	NA	NA	2.15	0.23	0.38
E. TIMOR	NA	1.0	NA	NA	NA	NA	1.88	0.24	0.26
IRIAN JAYA	10.6	75.6	86.2	0.90	6.47	4.23	47.82	7.33	10.34
TOTAL	743.5	1753.9	2497.4	1.46	4.24	6.33	22.25	3.95	5.80
[JAVA & BALI]	[-743.5]	[-1753.9]	[-2497.4]	[-0.78]§	[-2.36]§	[-4.47]§	[-16.09]§	[1.95]	[3.47]

¹P. Gardner, Provincial Population Projections (Jakarta: UNCHS/GOI NUDS Project, 1985), Table 4.

¹¹Departemen Transmigrasi, Daftar Proyek Transmigrasi Yang Dibina Tahun 1985/86 (to August 1985).

¹¹¹Includes 1971-80 + 1980-85 transmigrants

*Source for Provincial population BPS, Statistik Indonesia 1984, Tabel 3.1.2; households from 1983 Agric. Census.

§Transmigrants have been (re-)added to the provincial population totals to estimate the totals which would have been reached without transmigration. See Appendix A1.

FIGURE 1

TRANSMIGRANTS (1971-80) AS PERCENT OF 1980 PROVINCIAL POPULATION

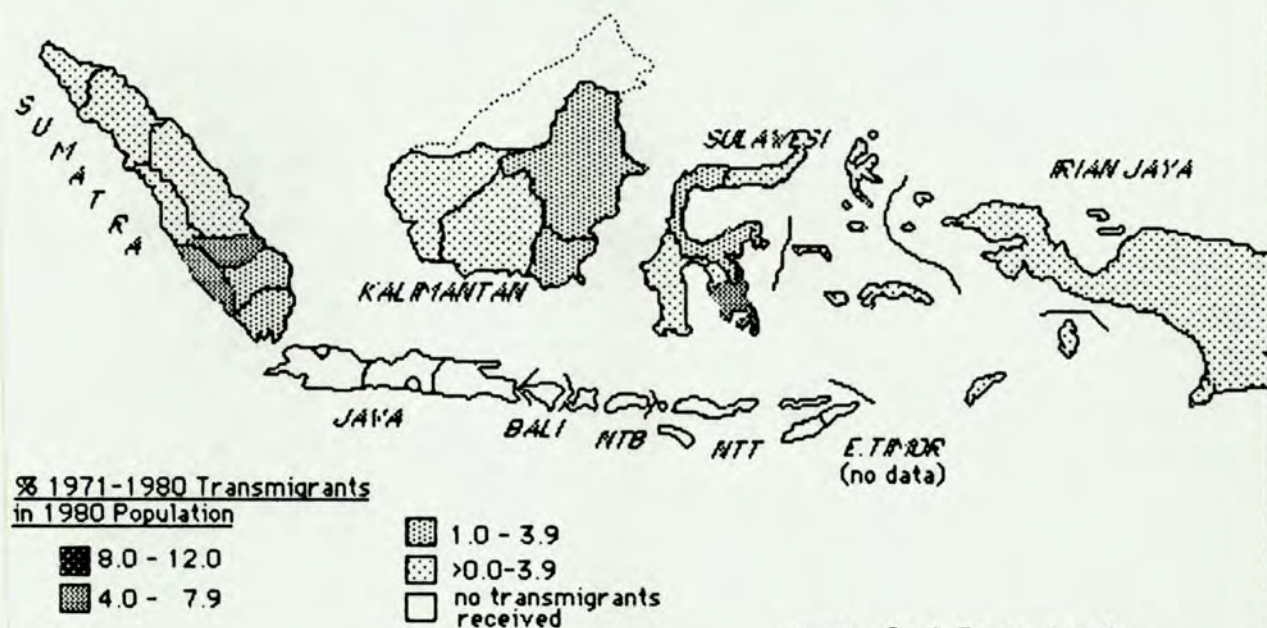
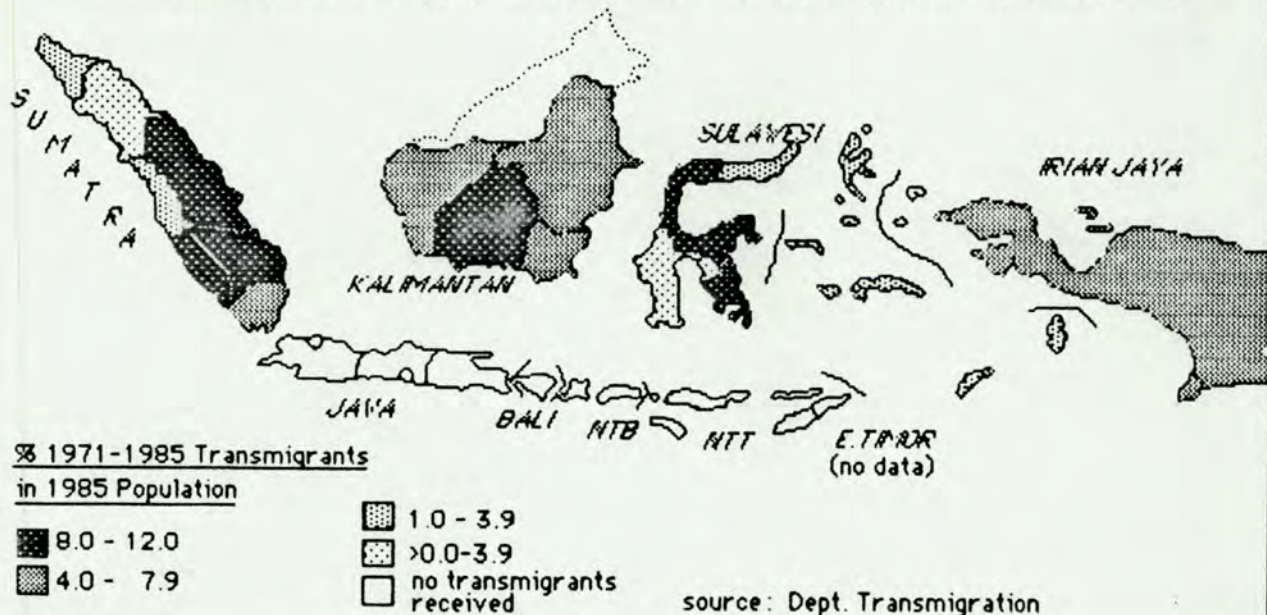


FIGURE 2

TRANSMIGRANTS (1971-85) AS PERCENT OF 1985 PROVINCIAL POPULATION



in share of incremental population growth. Although the contribution to provincial population increases was relatively modest in the 1970s, with transmigration accounting for no more than 22 percent of the population growth in any given province, the contribution in the early 1980s changed dramatically.

In seven provinces the share was equal to almost half or more of the total estimated five-year population increases. Conspicuous among these were the provinces of Central Kalimantan and Southeast Sulawesi, both of which had transmigrant arrivals equivalent to more than 60 percent of their population increases between 1980 and 1985. The implications of these rates of change have potential positive and negative features. While, on the positive side, they imply rapid increases in the labor power and the stock fixed capital in these provinces, there is, on the negative side, a concern that the pace of the increases implies substantial pressure on local populations and institutions to absorb the impact of these changes. Unfortunately, few studies have been carried out which document these impacts. There is little information on, for example, how closely the profile of transmigrant skills matches that of labor demands in receiving provinces, or the level at which provincial development budgets are augmented to account for either the direct or indirect impacts of transmigration activities.¹ Section 4 discusses these questions more fully.

With regard to the sending provinces, the share of transmigrants in population increases between 1980-85 are shown to be more significant than in the 1971-80 period. Nevertheless, the data show that even at very high levels of transmigration program, some 84 percent of the population increases in sending regions were not directly or, given the significant proportion of spontaneous and local transmigrants in the total figures, indirectly touched by the program.² The previous conclusion that transmigration and associated out-migration can at best offer only a partial solution to perceived problems of over-population on Java cannot, therefore, be escaped. It follows that transmigration cannot be seen as the major tool for addressing the problems associated with of landlessness, underemployment and poverty on Java or Bali, although it may be one source of relief in certain critical areas where soil erosion or natural disasters indicate the need for resettlement.

Returning to the indicator of the ratio of transmigrants to regional populations, it is well known that the impact of transmigration is spatially confined to relatively small areas, i.e. the kabupaten level. This is so not only because of relatively undeveloped transportation and communications systems in many outer island provinces, but also because the standard farm model of transmigration is oriented toward food production for household consumption rather than toward cash crop production and export. Given the spatially restricted nature of the impact of transmigration, kabupaten level analysis of the distribution of transmigrants gives a more accurate picture of the geographical impact of the transmigration program. Given, too, the fact that transmigrants are not spread evenly throughout the receiving provinces, the contrasts become even greater than those shown at the provincial level.

¹ Some provincial planners in South Sumatra, for example, have stated that transmigrants are without the skills needed to qualify for most of the the medium and large-scale manufacturing jobs being created in the province; transmigrants who worked in Palembang found jobs primarily as household servants.

² Some proportion of transmigration farms, ranging around 10 percent, are reserved for households in the receiving provinces. In addition, resettlement of households from areas in Lampung to other transmigration sites are also included in the sponsored transmigration figures.

FIGURE 3
SHARE OF TRANSMIGRANTS IN 1971-80 PROVINCIAL POPULATION GROWTH

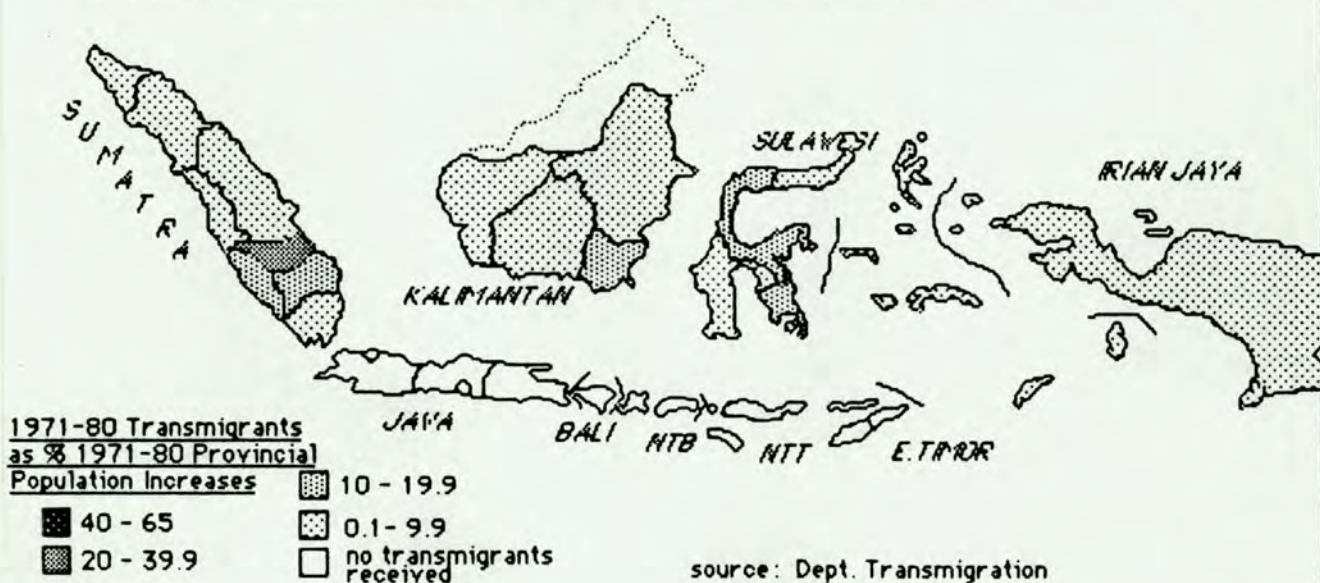


FIGURE 4
SHARE OF TRANSMIGRANTS IN 1980-85 PROVINCIAL POPULATION GROWTH

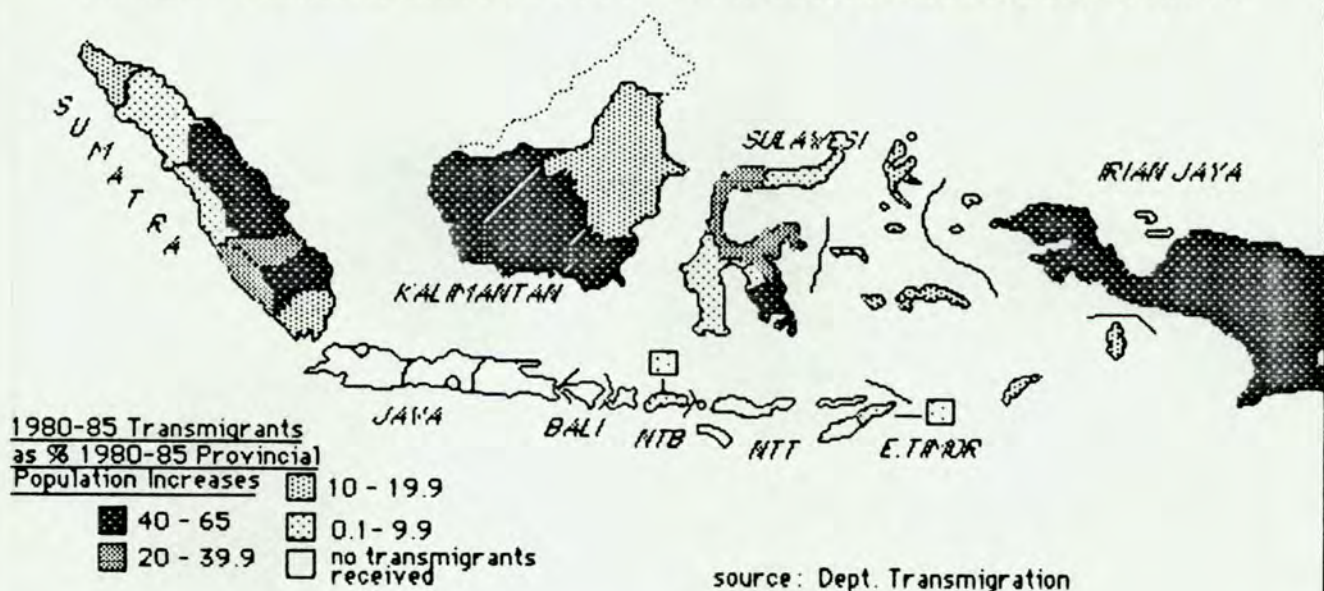


Figure 5 shows the number of transmigrants which have arrived in outer island kabupaten approximately from 1980 to mid-1985.¹ The level of concentration of transmigrants is even more striking than that shown above at the provincial level. Two kabupaten in Sumatra (in Lampung and South Sumatra) have absorbed more than 200,000 transmigrants, and together they accounted for one-quarter of all the transmigrants during the 1980-85 period. In seven other kabupaten, more than 45,000 transmigrants arrived within the five-year period. These nine kabupaten, out of 66 transmigrant-receiving kabupaten, absorbed 53 percent of the total transmigrants (see Appendix Table A2). Almost three-quarters of the transmigrants were accommodated in 20 kabupaten.

These figures once again indicate that for certain areas population increases brought about by transmigration have been substantial in both scale and pace. Figure 6 confirms this by showing the ratio of transmigrants to non-transmigrants by kabupaten. In two instances transmigrants equaled slightly more than 40 percent of the kabupaten population. In seven others they equaled more than 20 percent of the population. Given this concentration of transmigrants in a few areas, in most other kabupaten they are found to equal less than 10 percent of the total population.

What the foregoing analysis suggests is that the regional variation in the intensity of transmigration is likely to be a key variable in explaining direct and indirect impacts of the program. Of particular interest is the hypothesis put forth by some that a high intensity of activity creates its own 'hothouse' effect, stimulating local agriculture and non-agricultural production and employment through transmigrant spending and the sheer quantity of public works activities attendant to the development of transmigration sites in their early years. Towns such as Baturaja in South Sumatra or Kotabumi in Lampung, which lie near some of the greatest concentrations of transmigration activity during Repelitas II and III and were only a small settlements a decade or so ago, have become boom-towns growing at well above the average urban growth rate and are pointed to as examples of the indirect regional impact of intensive transmigration activities.²

Caution must be used, however, in treating numbers of people alone as a sign of either success or potential success in stimulating especially long-term positive regional impacts through transmigration. It is still not certain, for example, that, as with towns that boom, there may not also be towns that go bust after the initial phase of public support and heavy infrastructural development activity. Much depends on integrating transmigration development into the longer-term development activities of the region in a manner in which the regional economy can draw upon rather than overtly depend upon transmigrant resources alone.

¹ Many of the transmigrants included in the data were targeted for earlier years, but only arrived in site destinations at the beginning of Repelita III (1979/80).

² Baturaja (1980 population of 25,046) and Kotabumi (40,090 in 1980), had estimated growth rates of 8.08 and 6.19 percent per year, respectively, between 1980-85, substantially above the overall urban growth rate in either Sumatra Selatan (4.46 percent) or Lampung (4.40) during the period (NUDS, 1984).

FIGURE 5 NUMBER OF TRANSMIGRANTS REPELITA III & IV BY KABUPATEN 1985*

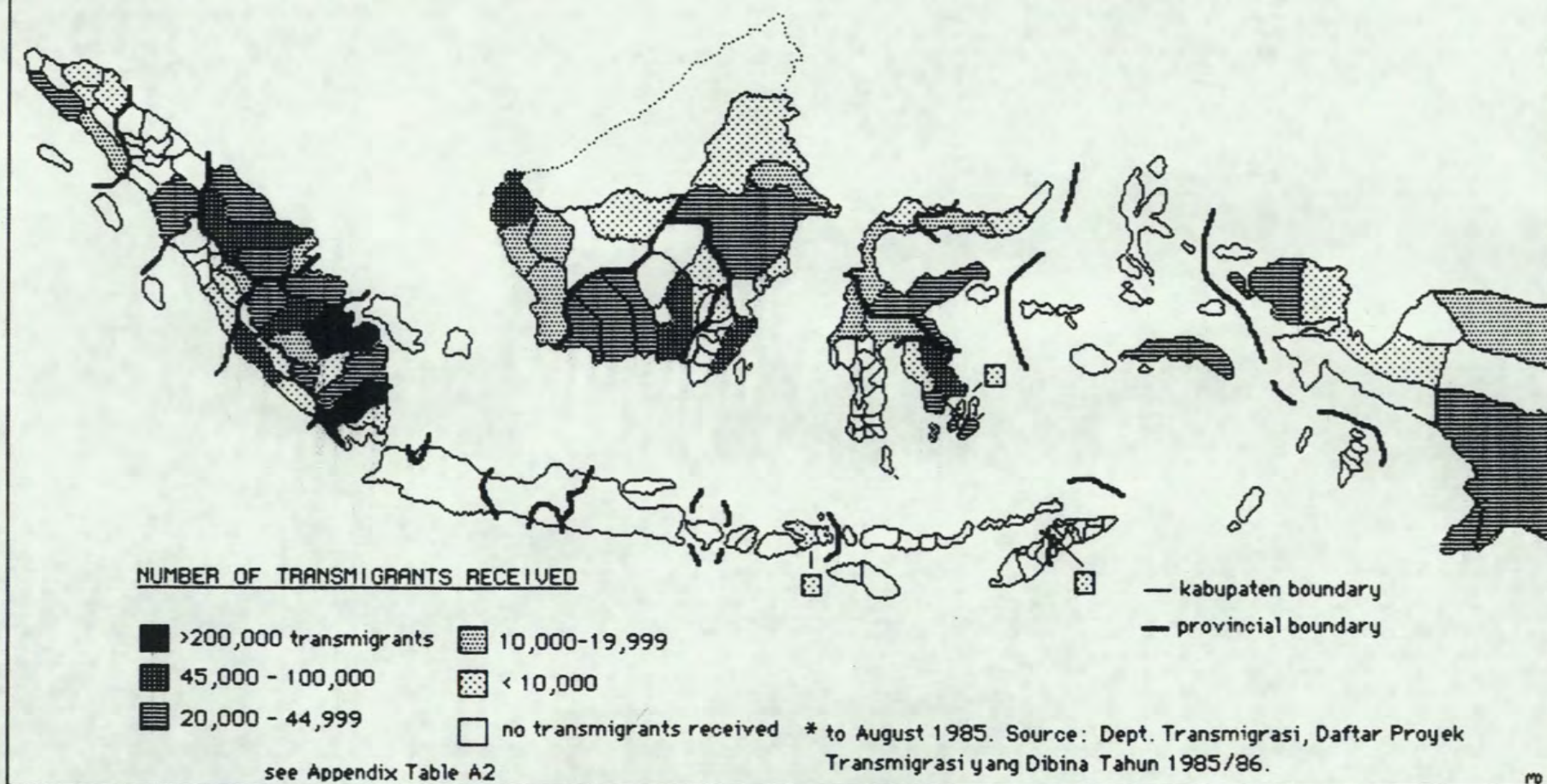
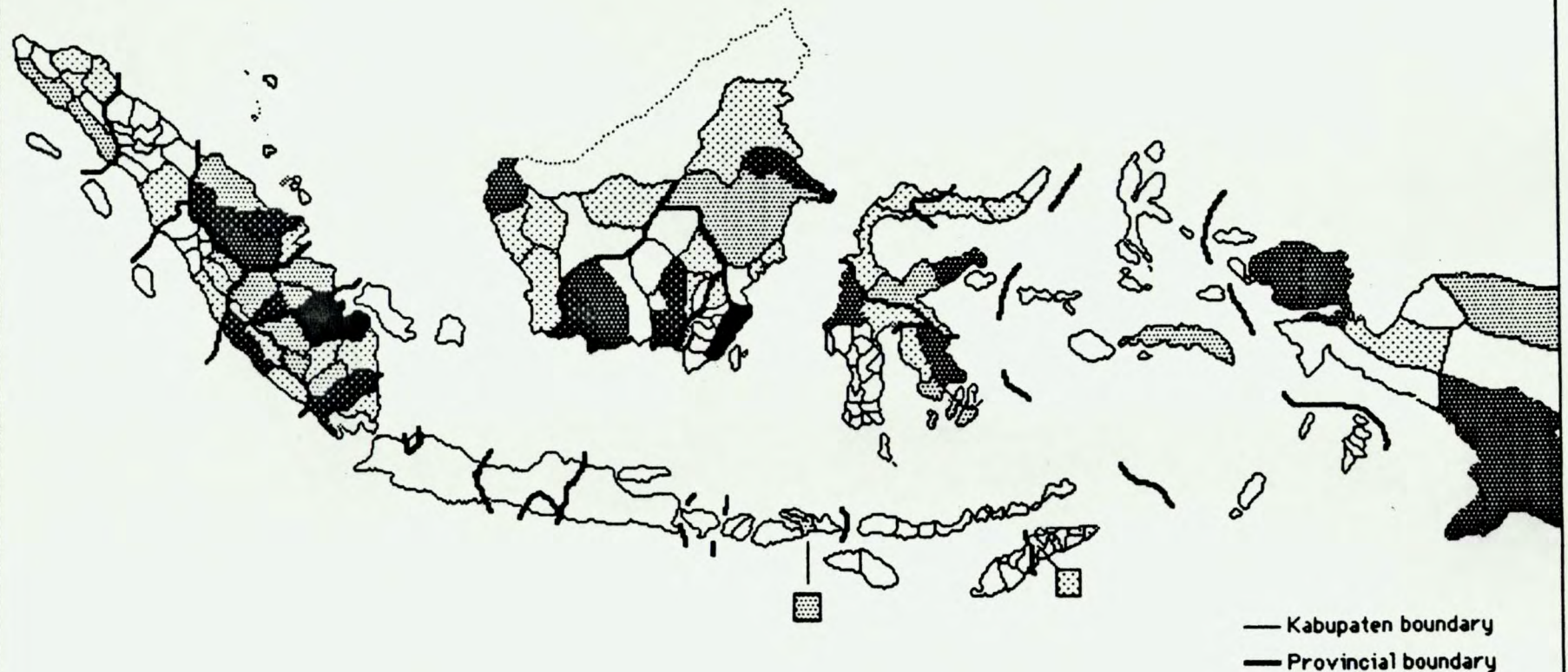
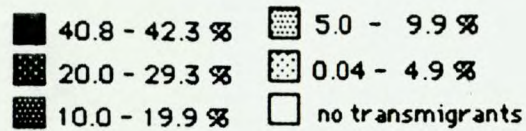


FIGURE 6 REPELITA III & IV TRANSMIGRANTS* AS % 1980 KABUPATEN POPULATION



No. Transmigrants/1980 Population (in %)



source: Dept. Transmigration, Daftar Poyek Transmigrasi Yang Dibina Tahun 1985/86 and BPS, 1980 Census, series L2.

*Repelita III and IV Transmigrants only; covers approx. years 1979/80-August 1985.

2. Land Opening, Infrastructure, and Crop Production

2.1 Land Opening

As with many aspects of transmigration, land opening carries potentially desirable and undesirable impacts. On one side is the benefit of bringing into production vast areas of unused and underutilized land. The very low population densities in Indonesia's outer islands, and the underutilization of natural resources they seem to imply, have long been put forward as a major justification for the transmigration program as a means of realizing the potential of the vast territory of the archipelago. The fact that Java has three-fifths of the national population on 6 percent of the national land area has also given an appearance of support to the need to redistribute the national population in order to achieve this objective. On the other side of the ledger have been the difficulties in finding suitable land for foodcrop production and incidents in which land claimed for transmigration has subsequently been found to have already been settled by local people or other migrants.¹ Such incidents are related to the concern that situations may be created in which indigenous populations, who depend upon extensive areas for shifting cultivation, and who do not have the wherewithal to intensify production, lose the capacity to produce for their own subsistence. Finally, there has been concern that in practice the clearing of land has been at such a pace that it has in some cases it may have been unable to follow the steps required to guard against subsequent land erosion.

The evidence is mixed on all of these issues. Field trips in Sumatra indicate that great care has been taken in respecting the land claims of local populations. This may not necessarily be the case everywhere, however. More difficult to assess is the impact of forest-cutting and other resource intensive activities such as wood fuel intensive brickmaking carried out by transmigrants as a means of supplementing household incomes. There is also the problem that once land is cleared and if it is not put under cultivation, many areas soon become invaded by *alang-alang*, which may make bringing the land into cultivation at a later date arduous.²

Table 3 shows the distribution of land made available for transmigrants in the receiving province. The data only cover land used for production, and do not cover the total amount of land used for transmigrant site development and roads. The data presented in the table show that, as with the concentration of transmigration activities, Sumatra accounts for almost 60 percent of household and farmland potentially available, 64 percent of that actually allocated, and 68 percent of that recorded as being in use. Kalimantan and Irian Jaya, which are the major targets for Repelita IV, accounted for 27 percent (23 percent and 4 percent, respectively) of land available but a lower 19 percent (17 and 2 percent) of the total transmigrant house and farming land actually being used as of August 1985. Sulawesi had 12 percent of land available and about the same percentage of the total land in use.

Table 4 shows the regional impact of transmigrant land distribution in terms of its ratio to

¹ W. Collier (1979, p.20.) discusses the difficulty in obtaining information about current land use and land claims in many tidal swamp areas. He also warns of the problem of declining soil fertility in peat swamps when changing from shifting to perennial land use.

² Levang and Marten (1984, p. 25), in a study of a transmigration site in South Kalimantan, note that delays after land clearing in transmigrant arrivals saw much land invaded by *alang-alang*. Moreover some 107 mandays were needed to clear the land for production again; this compared to only 49 days needed if the land had been under cultivation the previous year.

TABLE 3 DISTRIBUTION OF TRANSMIGRANT LAND BY PROVINCES 1985 (%)

PROVINCE	TRANSMIGRANT HOUSING AND FARM LAND*		
	AVAILABLE	ALLOCATED	TOTAL IN USE
ACEH	3.2	2.5	2.2
N. SUMATRA	1.8	1.8	2.0
W. SUMATRA	1.4	1.3	1.8
RIAU	9.7	9.8	6.3
JAMBI	6.3	5.4	6.7
S. SUMATRA	21.0	24.8	34.3
BENGKULU	3.3	3.3	3.4
LAMPUNG	12.3	14.5	11.5
SUMATRA	59.0	63.6	68.2
W. KALIMANTAN	7.1	3.6	2.2
C. KALIMANTAN	6.2	6.9	5.4
S. KALIMANTAN	5.6	5.4	5.1
E. KALIMANTAN	3.7	3.7	4.0
KALIMANTAN	22.6	19.7	16.8
N. SULAWESI	1.0	1.0	1.0
C. SULAWESI	4.6	4.4	4.1
S. SULAWESI	1.4	1.7	1.8
S.E. SULAWESI	4.7	5.3	5.6
SULAWESI	11.7	12.2	12.5
MALUKU	2.1	2.2	0.3
NTB	0.5	0.4	0.5
IRIAN JAYA	4.1	1.9	1.7
E. TIMOR	0.1	0.1	0.0
TOTAL	100.0	100.0	100.0

*See Appendix A2 for sources and definitions.

TABLE 4 TRANSMIGRATION LAND AS % PROVINCE LAND IN USE*

PROVINCE	-----TRANSMIGRANT LAND-----		
	AVAILABLE	ALLOCATED	LAND IN USE
ACEH	2.4	1.6	1.0
N. SUMATRA	1.1	0.9	0.7
W. SUMATRA	1.5	1.2	1.2
RIAU	11.3	9.6	4.4
JAMBI	7.9	5.7	5.0
S. SUMATRA	16.4	16.1	15.8
BENGKULU	17.8	15.0	11.0
LAMPUNG	13.1	12.9	7.2
SUMATRA	7.4	6.6	5.1
W. KALIMANTAN	8.6	3.7	1.6
C. KALIMANTAN	7.9	7.4	4.1
S. KALIMANTAN	7.5	6.0	4.1
E. KALIMANTAN	6.3	5.3	4.1
KALIMANTAN	7.7	5.6	3.4
N. SULAWESI	2.2	1.9	1.4
C. SULAWESI	0.6	0.5	0.3
S. SULAWESI	0.8	0.7	0.6
S.E. SULAWESI	11.6	10.8	8.2
SULAWESI	1.1	1.0	0.7
MALUKU	NA	NA	NA
NTB	1.2	0.7	0.6
IRIAN JAYA	NA	NA	NA
E. TIMOR	NA	NA	NA
TOTAL	4.6	3.8	2.7

* Provincial land use for 1981; includes land used for: house compound, garden, shifting cultivation, and sawah. Does not include pastures, uncultivated swamp, water ponds, forested land or other unutilized land. BPS, Statistik Indonesia 1984. Transmigrant land includes only house and field land. Source: Dir. Jen. Pengerahan dan Pembinaan, Buku Data Usaha Tani 1985.

total land under use in each transmigrant receiving province.¹ Again, the ratios are highest in Sumatra where, in terms of land potentially available under the transmigration program, they are equivalent to from 12 to 18 percent of the total land being used in four provinces -- Bengkulu, South Sumatra, Lampung and Riau. The only other province to account for more than 10 percent was Southeast Sulawesi.

When viewed in terms of land actually allocated and land in use, the percentages fall significantly. Overall, transmigrant land available equaled 4.6 percent of the provincial land, but transmigrant land in use equaled only 2.7 percent. The differences in land available and land in use appeared to be greatest in Kalimantan, reflecting perhaps the time lag between site preparation and transmigrant arrival in newer areas being opened at the end of Repelita III and the beginning of Repelita IV. This possibility is indicated in Table 5, which shows only three-fifths of land available and 70 percent of land allocated actually recorded as being in use. In nine provinces less than half the amount available is in use.

The last two columns of Table 5 indicate that much of the land use is concentrated on the house lot and on the first plot of land which, in most cases, is adjacent to the house lot. Secondary plots, which are often separated by considerable distances from the household, show a much lower level of use than the first plot. Field visits and case studies suggest that in many cases there is little sustained effort to try to open the second plot for agricultural use.

In addition to the tendency not to use all the land allocated, there is evidence from some case studies of transmigration sites indicating that transmigrants are not able to invest in costly efforts to maintain the fertility of marginal soils on land brought under cultivation, and may even begin to use less rather than more land over time. A study of sites in Jambi, for example, found that due to unavailability of pesticides, inability to purchase costly inputs, and limitations on labor supply, many transmigrants cleared more land than they could effectively use, resulting in vast areas falling under *alang-alang*.² Another study in South Kalimantan concluded that after the initial period of government aid, and given the arduous tasks of keeping land clear and soil fertility maintained, a "considerable reduction" in area under production was expected in the very near future, with more and more transmigrants turning to non-farm employment outside of the sites.³

Because of the tremendous financial and physical efforts required to maintain land fertility and to limit rat, pig, elephant and other pest infestations and invasions typical of many transmigration sites, this tendency of reducing land use to levels sufficient for only producing partially for household consumption and seeking non-farm employment may be a trend common to many transmigration sites. If so, the actual ratios of transmigrant to provincial land in use may be lower than indicated in the tables above. Although such findings may be interpreted by some as indicating that too much land has been allocated to transmigrants in the past (transmigration sites in Irian

¹Provincial land use data is for 1981; to the extent that land opening by local people has occurred between 1981 and 1985, the transmigration figures in Table 3 overstate the impact of transmigration land opening.

²Euroconsult (1983).

³Levang and Marten (1984). In other areas the separation of plots from the house lot in sites which have nucleated village settlement has apparently resulted in significantly lowered capacity to control pests and weeds, and therefore reduced efforts to maintain holding sizes.

TABLE 5 LAND IN USE AS PERCENT LAND AVAILABLE & ALLOCATED

PROVINCE	--LAND IN USE AS %--		--HOUSE+PLOT I AS %--	
	AVAILABLE	ALLOCATED	ALLOCATED	LAND IN USE
ACEH	39.4	61.2	84.6	88.4
N. SUMATRA	66.1	76.7	72.5	68.3
W. SUMATRA	77.6	100.0	80.6	80.6
RIAU	38.9	45.9	69.4	94.7
JAMBI	62.8	87.7	87.0	94.1
S. SUMATRA	96.7	98.3	62.6	62.5
BENGKULU	61.7	73.0	63.7	78.0
LAMPUNG	55.4	56.3	63.4	100.0
SUMATRA	68.5	76.3	67.5	77.2
W. KALIMANT...	18.6	43.5	96.9	99.7
C. KALIMANTAN	51.6	55.3	64.7	72.5
S. KALIMANTAN	54.3	67.7	69.7	100.0
E. KALIMANTAN	64.8	76.7	68.7	71.8
KALIMANTAN	44.0	60.6	72.8	84.4
N. SULAWESI	60.5	73.4	73.4	100.0
C. SULAWESI	53.1	67.0	69.5	85.5
S. SULAWESI	72.5	75.9	63.8	68.9
S.E. SULAWESI	71.3	76.2	66.5	80.8
SULAWESI	63.4	72.7	67.7	82.2
MALUKU	8.4	10.0	69.9	93.4
NTB	51.9	92.9	59.6	56.5
IRIAN JAYA	25.2	64.9	77.7	100.0
E. TIMOR	28.8	28.8	62.7	100.0
TOTAL	59.2	71.1	68.8	92.2

source: Dir. Jen. Pengerahan dan Pembinaan, Dir. Bina Usaha
Ekonomi, "Buku Data Usaha Tani" (Jakarta, 1985).

Jaya are now being reduced in size), a more important point which will be taken up in Section 3 is whether the standard food crop model, under existing conditions, works to secure basic transmigrant food supplies.

2.2 Road Construction

One of the most important factors promoting the integration of transmigrant activities with the regional economy is the construction and maintenance of road networks. Not only are frequent and reliable transportation networks quintessential to the marketing of agricultural commodities produced by transmigrants, but as increasing evidence points to the dependence which transmigrants have on off-site employment, they are also found to be crucial to the maintenance of their very modest household incomes. More generally, access to other settlements also potentially increases access to lower cost farm production inputs and information and consumer goods and services.

The nature of transmigration, which places people in previously uninhabited zones and areas with various degrees of isolation from other settlements, has over the years led the program to accept the burden of providing roads and physical linkages with other settlements as a basic part of site development. As the transmigration program has expanded and undergone reorganization, it has directly taken on the responsibility of building and maintaining roads within transmigration sites and access roads between sites and major provincial and national roads and highways. Data is not available for the total number and length of roads built under the auspices of transmigration programs since Repelita I, but since a majority of migrants have been sent to the outer islands under Repelita III, the figures in Table 6 are highly indicative of the overall distribution of roads.¹

Once again, Sumatra accounts for more than half (57 percent) of the kilometers of roads constructed between 1981/82 and 1984/85. But this dominance is more apparent than real, as these proportions are largely comprised of Lampung, which reportedly received 17 percent of the length all roads constructed, and South Sumatra following with 13 percent. Several provinces elsewhere also registered higher proportions of the total than provinces in the north and northwestern part of Sumatra. Central Sulawesi received 11 percent, and West Kalimantan received 10 percent. Together 7 provinces of the total of the 20 receiving provinces captured 71 percent of the road length. There is an obvious relationship between share of roads and share of transmigration population moving to provinces (see Table 1), although the correlation is not perfect.

Table 7 shows the impact which the distribution of transmigration roads has had relative to the stock of local roads. The term local is used to cover all roads (except transmigration roads) in the province, including those under the respective responsibilities of the national, provincial, kotamadya (municipalities) and kabupaten (district) governments. Because most roads constructed through transmigration will eventually become the responsibility of the kabupaten governments, the ratio between transmigration and kabupaten roads is included in the table.

¹ It is not clear whether the figures for transmigration sites in Tables 6 and 7 are actual or estimates. Appendix Table A4 indicates that the Ministry of Transmigration puts forth estimations (based on fixed road/household ratios) as actual construction figures. Such figures are likely to have a wide margin of error.

TABLE 6 ROADS CONSTRUCTED AND MAINTAINED IN TRANSMIGRATION AREAS 1981-84

PROVINCE	TRANSMIGRATION ROADS (Km.)*			% DISTRIBUTION		
	CONSTRUCTED 1981-1984	MAINTAINED 1984	REHABIL. 1984	(C)	(M)	(R)
ACEH	579	171	116	4.4	5.4	5.4
N. SUMATRA	374	69	82	2.8	2.2	3.8
W. SUMATRA	146	45	22	1.1	1.4	1.0
RIAU	840	102	303	6.3	3.2	14.0
JAMBI	1077	318	92	8.1	10.1	4.3
S. SUMATRA	1779	305	184	13.4	9.6	8.5
BENGKULU	505	112	91	3.8	3.5	4.2
LAMPUNG	2202	670	331	16.6	21.2	15.3
SUMATRA	7502	1792	1221	56.5	56.7	56.4
W.KALIMANTAN	1269	212	432	9.6	6.7	20.0
C. KALIMANTAN	511	157	134	3.8	5.0	6.2
S. KALIMANTAN	166	26	54	1.2	0.8	2.5
E. KALIMANTAN	214	45	47	1.6	1.4	2.2
KALIMANTAN	2160	440	667	16.3	13.9	30.8
N. SULAWESI	40	20	0	0.3	0.6	0.0
C. SULAWESI	1440	243	0	10.8	7.7	0.0
S. SULAWESI	131	68	5	1.0	2.2	0.2
S.E. SULAWESI	459	149	56	3.5	4.7	2.6
SULAWESI	2070	480	61	15.6	15.2	2.8
MALUKU	595	146	106	4.5	4.6	4.9
NTB	79	3	33	0.6	0.1	1.5
IRIAN JAYA	825	287	76	6.2	9.1	3.5
E. TIMOR	49	13	0	0.4	0.4	0.0
TOTAL	13280	3161	2164	100.0	100.0	100.0

source: Min. Transmigration, 1985.

*includes main (penghubung), access (poros) and village (desa) roads.

TABLE 7 TRANSMIGRATION ROADS AS A PROPORTION OF LOCAL ROAD NETWORK

PROVINCE	PROVINCIAL ROADS 1984 (KM.)*			TRANSMIGRATION/ PROVINCE (%)	
	KABUPATEN KOTAMADYA	NAT'L, PROV.,	TOTAL	KABUPATEN	TOTAL
ACEH	7076	2906	9982	8.2	5.8
N. SUMATRA	9944	5188	15132	3.8	2.5
W. SUMATRA	5860	2772	8632	2.5	1.7
RIAU	4918	2344	7262	17.1	11.6
JAMBI	2533	2047	4580	42.5	23.5
S. SUMATRA	5801	3891	9692	30.7	18.4
BENGKULU	2496	1031	3527	20.2	14.3
LAMPUNG	2589	2007	4596	85.1	47.9

SUMATRA	41217	22186	63403	18.2	11.8

W. KALIMANTAN	2370	1812	4182	53.5	30.3
C. KALIMANTAN	3633	722	4355	14.1	11.7
S. KALIMANTAN	2942	1177	4119	5.6	4.0
E. KALIMANTAN	788	2550	3338	27.2	6.4

KALIMANTAN	9733	6261	15994	22.2	13.5

N. SULAWESI	3982	1645	5627	1.0	0.7
C. SULAWESI	3509	2800	6309	41.0	22.8
S. SULAWESI	14413	3394	17807	0.9	0.7
S.E. SULAWESI	3707	1305	5012	12.4	9.2

SULAWESI	25611	9144	34755	8.1	6.0

MALUKU	2408	1850	4258	24.7	14.0
NTB	3420	928	4348	2.3	1.8
IRIAN JAYA	4551	643	5194	18.1	15.9
E. TIMOR	0	1687	1687	-	2.9

TOTAL	86940	42699	129639	15.3	10.2

source: Dept. Transmigration, 1985. See Table 6 for Transmigration Road length.

Concerning percent of total roads, the level is highest in Lampung, where the length of transmigration roads constructed between 1981/82 and 1984/84 is equivalent to 48 percent of the local road network. Other provinces with high equivalencies of more than 20 percent are West Kalimantan (30 percent), Jambi (24 percent), Central Sulawesi (23 percent). Given that without transmigration many, if not most, of the roads built through the transmigration program could not have been justified on the basis of pre-existing demand, these proportions of transmigration in total local road length shown in Table 7 are impressive. They become even more impressive when viewed as a percentage of kabupaten roads: Lampung at 85 percent, W. Kalimantan at 54 percent, Jambi and Central Sulawesi at more than 40 percent, and four other provinces at more than 20 percent.

Such quantities, as with all aspects of transmigration need to be interpreted in terms of their quality and their meaning with regard to the economic development of the host region. Road construction provides an important case in point; for if roads are to play the integrative role assigned to them, they must be maintained at a quality which makes them usable throughout most of the year. Site visits in Lampung and South Sumatra, as well as reports from other provinces, indicate that this is not generally the case. Unless constantly maintained, most of the type of roads constructed on transmigration sites suffer serious deterioration within a year or two of construction due not only to seasonally heavy rains but also to the heavy traffic they must bear during site construction and expansion activities.¹ Even within transmigration sites, public transportation may be virtually absent, resulting in arduous and time-consuming efforts to reach farm plots, which may be several kilometers from the home, and to engage in other off-farm work.² On the huge site of Baturaja-Martapura family members have chosen to physically resettle away from their homes and reside in temporary shelters rather than walk the several kilometers a day it would require in order to engage in public sector wage and piece work, such as land clearing and bagging of young rubber trees. Transmigration supported transportation systems within the sites are reportedly not established for fear discouraging the development of such activities in the private sector.

Weak transportation linkage between transmigration sites and the region is a key factor inhibiting the realization of the goal of transmigration to raise incomes above the levels which transmigrants had before leaving their home provinces. First, more isolated sites, when they do market products, have difficulty in obtaining good prices for their produce, either because of monopsony over markets, and therefore low prices, by the few traders willing to come to these sites, or because, at any rate, the cost of transportation of goods to be sold in more competitive markets must be borne largely by the producers. Secondly, available studies have all concluded that access to work off the transmigration site has been fundamental to the longer-term economic welfare of transmigrants. Where such employment is not available near the sites, temporary and seasonal migration has been reported to have become a common recourse (Euroconsult, 1983). As on-site construction work and the indirect economic impacts of the initial phases of site develop-

¹ The heavy traffic also results from the use of transmigration roads in many areas for timber extraction much of which, at least in South Sumatra, appears take place at night as a means of avoiding official checkpoints. Many of the transmigration roads traveled over in South Sumatra are unusable by either bicycle or bus, and had themselves become a source of serious erosion along their embankments.

² On a related topic, the Euroconsult (1983) study of Jambi found that the transmigration site extension agent could not perform his job of meeting with farmers because he had no transportation.

ment decline, and as direct support for agricultural production on poor soils is withdrawn, these outside employment linkages become all the more important; yet it is just at this stage when roads appear to be in their most dilapidated condition.

In receiving provinces outside of Sumatra the basic road system is still quite rudimentary. Transmigration roads in these regions, rather than merely linking sites to an existing network, themselves constitute the pioneering road development efforts. In the region around the Irian Jaya city of Merauke, which is a primary transmigration target area for Repelita IV, there are no all-weather roads in existence at the present, although some are being constructed; regular linkages between transmigration sites and urban centers via road systems are expected to be impossible because most local and transmigration roads are passable only between the months of June to November.¹ Two sites in this area were reported to be totally isolated from any other settlements and were thus deemed by a reconnaissance team to be economically unviable.²

Thus, although the development of dependable transportation systems is undoubtedly crucial to the viability of transmigrant sites, and although the initial investment in roads is substantial in relation to the local level of road development, the low level of maintenance has seriously and unnecessarily limited the contribution which roads can make. Two factors appear to lie behind the current attitude toward road maintenance. One is the apparent priority given to initial land preparation over long-term site development, including farm as well as other site land. The other is perhaps the farm model which lays stress on subsistence food production, leaving commercial cash crop production to a latter phase. Behind both may be the feeling that since long-term development is a topic to be considered after the sites pass from the responsibility of transmigration authorities to the local government, emphasis need not be given to maintaining and expanding linkages between the settlement and the outside province. Whatever the reasons, the better road maintenance and more emphasis on linking especially the more distant sites with other settlements in the very early phase of site development would appear to be fundamental to the task of successful development of transmigration sites and for gaining mutual benefits between sites and the regional economy.

¹FENCO Engineers, "Phase II and Phase IIIA Studies of Transmigration Settlement Development; Irian Jaya Package 1" (Dep. Transmigrasi, August 1985).

²CAG (1985). In the north the all weather road from Jayapura was found to have been a significant factor in the economic welfare of transmigration sites located along it, but even here the Trans-Irian road was found in many places to be severely rutted and passable by only four-wheel-drive automobiles. Although river transportation was the most commonly used in the south, the cost of transporting chickens by ferries to Merauke from at least one site was claimed by one transmigrant to be Rp. 10,000. This reconnaissance team concluded that economical viability required that sites be no more than 2-3 hours travel time from market centers; otherwise transmigrants in this region had no chance to market their produce.

2.3 Farm Production

If, as previously suggested, agricultural production has played a relatively small role in generating increases in transmigrant household income and welfare, the regional impact of transmigrant farming activities can also be expected to be relatively modest. This section attempts to assess this proposition using provincial level data. Beginning with rice, Table 8 presents very rough estimates of levels of transmigrant rice production by province. Because of the absence of agreement even in official transmigration publications concerning output per hectare and total output, four estimates have been given. Each is based on the assumption that rice production is confined to the first parcel of land plus houselot, with 80 percent of this area successfully planted and harvested at the specified rates.¹ The first three estimates of 0.5 to 1.5 tons/ha cover what may be considered to be the range from lowest to highest levels of production possible under current practices and land quality.

The first estimate of 500 kg./ha. may appear to be low, but in view of the tremendous pest infestations, the extreme variability in weather where all but a few sites depend upon rainfed agriculture, and continuing problems in the timing of supply of critical inputs for production, this estimate may be the closer to actual yields than the more optimistic levels, especially given the assumption behind all the estimates that 80 percent of the area is successfully harvested. Of the studies available from Jambi, South Sumatra, Lampung, and South Kalimantan, none reported levels of production significantly higher than 500 kg./ha., and several indicated levels much lower.² Under this low assumption, the contribution of transmigrant rice production to provincial production overall is 1.2 percent. Only in Irian Jaya, where transmigrants represent the first wave of rice producers, is the level high; in no other province does it exceed 10 percent.³

At the more optimistic estimates of 1-1.5 tons per hectare, the contribution increases significantly in several provinces, although on an island basis it remains at 5 percent or less. The 1 ton/ha., which is thought by some to be well within the production possibility of most sites, yields provincial estimates moving up to 20 percent (and 162 percent in Irian Jaya). At the 1.5 ton level, six provinces show contributions of more than 10 percent. Although current evidence suggests that the 1.5 level is rare, except in parts of Sulawesi where irrigated rice production is possible, provincial transmigration reports often cite 1.7 tons/ha. as the standard level.

The final column estimates the level of production which would be achieved if transmigration sites had the same level of productivity as rice producers in their host provinces. Although, even

¹ Because the calculations are based on various assumed ratios of output per hectare, which are the same for all provinces, the estimated distribution of the total transmigrant production exactly follows the distribution of land among provinces as shown in Table 3.

² For Jambi the range was between 0.32 and 0.46 tons/ha (1982/83) (Euroconsult, 1983); in Pematang Panggang in South Sumatra it was 0.47 ton/ha (1982/83) (Universitas Sriwijaya, 1984); for Sebanan I in South Kalimantan it was 0.573 tons/ha (1982) (Levang & Marten, 1984); for the older study of Way Abung and Baturaja, the results reported by transmigrants was 0.56 tons/ha., but independent studies in the same area reported 0.95 tons/ha (World Bank, 1978).

³ It may be noted in passing that very high proportions of rice production in Eastern Indonesia have been received with mixed feelings. In Maluku there was an expression of concern by local planners that new food tastes brought by spontaneous as well as sponsored migrants were leading to changes in land use and conflict over land use between rice growers, which required more extensive land use, and sago growers.

TABLE 8
TRANSMIGRATION RICE PRODUCTION AS % PROVINCIAL PRODUCTION*

PROVINCE	TRANSMIGRANT/PROVINCIAL PRODUCTION (%)			
	-----PRODUCTION ESTIMATES AT-----			
	0.5 Ton/ha	1.0 Ton/ha	1.5 Ton/ha	Prov.Ton/ha
ACEH	0.4	0.8	1.3	2.9
N. SUMATRA	0.1	0.3	0.4	1.0
W. SUMATRA	0.2	0.5	0.7	1.9
RIAU	3.7	7.4	11.1	17.5
JAMBI	2.9	5.9	8.8	16.0
S. SUMATRA	3.7	7.4	11.1	20.1
BENGKULU	2.2	4.4	6.6	12.7
LAMPUNG	2.3	4.5	6.8	13.9
SUMATRA	1.4	2.9	4.3	9.2
W.KALIMANTAN	0.7	1.4	2.0	3.1
C. KALIMANTAN	3.5	7.0	10.5	13.2
S. KALIMANTAN	1.4	2.8	4.2	6.9
E. KALIMANTAN	6.3	12.5	18.8	24.8
KALIMANTAN	1.7	3.3	5.0	7.5
N. SULAWESI	0.7	1.5	2.2	5.6
C. SULAWESI	2.8	5.6	8.4	13.7
S. SULAWESI	0.1	0.2	0.3	0.8
S.E. SULAWESI	9.9	19.7	29.6	44.2
SULAWESI	0.7	1.4	2.2	5.2
MALUKU	2.5	5.1	7.6	5.5
NTB	0.1	0.1	0.2	0.5
IRIAN JAYA	81.0	162.1	243.1	309.5
E. TIMOR	4.7	9.4	14.1	NA
TOTAL	1.2	2.5	3.7	7.6

*Actual provincial production 1983; estimated Transmigrant production based on number of households mid-1985.

**Based on assumption that 80% of house plus first field (Lahan Usaha I) under use is for rice production and harvest.

(See Appendix Table A5).

with the expected lower fertility of transmigrant land relative to other land under cultivation in most provinces, such levels have been reached on transmigration site experimental plots and under specially controlled crop trials. Some observers have claimed, however, that for most settlers this level of production would require investments which appear to be far beyond the means of transmigrants, and may even be uneconomical in terms of the costs of inputs in relation to the value of the crops. If such levels could be achieved, however, the overall ratio to provincial production would be 7.6 percent. In some provinces the contribution could reach substantial proportions, and at either the 1.5 ton/ha. or the regional level of production, in Riau, Bengkulu, Lampung, Central and East Kalimantan, Central Sulawesi, Maluku and Irian Jaya, the contribution of transmigrant households would be proportionately higher than their share of agricultural households in the region (Table 10).

Given reported trends in transmigrant rice production, however, it appears unlikely that production will in most cases reach the 1.5 ton level or the average 2.8 tons/ha. of the receiving provinces. For if there is any generalization which seems to hold about trends in agricultural production, it is that transmigrants tend to de-emphasize the production of rice over time. Instead of investing more labor time in rice production, they tend to produce only at levels close to self-sufficiency, and to invest their time in other, more economically remunerative, activities. A report several years ago on Way Abung, a transmigration site in Lampung, for example, noted the increasing percentage of time devoted to off-farm work, citing reasons related not only to the relative attractiveness of this work, but also to the extreme difficulty transmigrants have in maintaining land fertility and the consequential decline in yields per hectare over time.¹

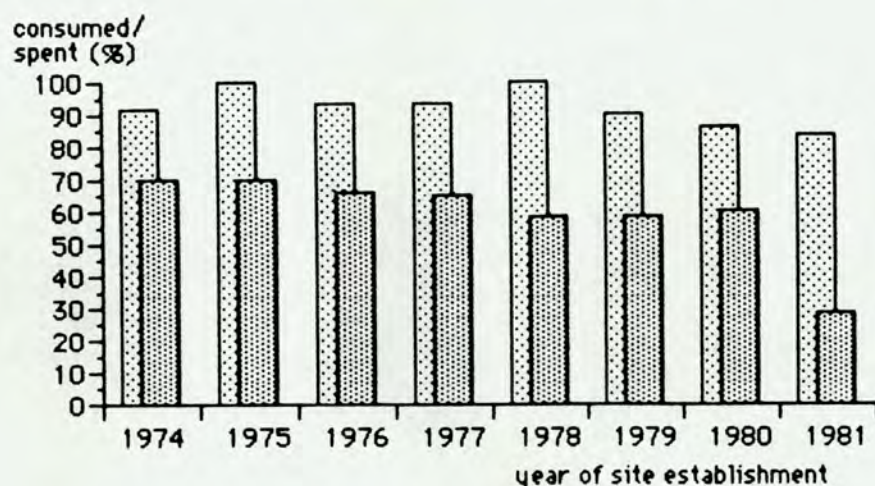
Figure 7 and Table 9 supports the generalization concerning low, and even declining, levels of rice production among transmigration sites in Jambi. Although the data are cross-sectional rather than from time series of individual schemes, they do suggest two important trends. First, the figures show that the percentage of rice sold or bartered is highest in new settlements and lowest in older ones, indicating that over time efforts to grow rice for the market diminish. Secondly, they also show very high levels of food purchases devoted to rice in all settlements, but more so in older settlements, indicating that at least in Jambi transmigrant farmers are producing rice at levels below their own household consumption needs, and that this tendency increases over time.² To the extent that household incomes allow for sufficient amounts of rice and other staple foods to be purchased, such a situation need not be cause for alarm (see Section 3). However, it does once again point to the way in which the farm model formulated on behalf of the transmigrants by the government may not be the one which the transmigrants themselves would choose.

In sum, the overall contribution of rice production to the regional economy remains small. While it provides an vital role in setting a lower limit on household welfare, it has not been a visibly marketed commodity as transmigrant households appear to produce at or near self-sufficiency themselves and the produce little, if any, increases for provincial markets.

¹ World Bank (1978, p.32).

² The study notes, however, that percentages of food budget spent on rice is lower in transmigration sites than in the surrounding villages, with the speculation that the greater reliance on rubber production in these villages has led to more dependence upon cash incomes for rice purchases.

FIGURE 7 **% OWN RICE PRODUCTION CONSUMED**
& % RICE PURCHASED, SELECTED
TRANSMIGRATION SITES IN JAMBI



■ percent of own rice production consumed by household

▨ rice as a percentage of all food purchases

source: see Table 9.

TABLE 9
RICE PRODUCTION FOR OWN CONSUMPTION AND
FOOD EXPENDITURE ON RICE BY YEAR OF ESTABLISHMENT
SELECTED TRANSMIGRATION SITES, JAMBI *

Settlement	SK 1	SK 2	SK 3	SK 4	SK 5	SK 7	KU 1	KU 2
Year Estab.	1974	1985	1976	1977	1978	1979	1980	1981
% Rice for Own Consumption	92	100	93	93	100	90	86	83
% Food Expenditure on Rice	70	70	66	65	58	58	60	28

*source: Euroconsult, "Transmigration II Project Jambi Province, Quarterly Report No. 6 (April - June 1983), Tables 5 & 7.

2.4 Production of other Food and Tree Crops

As transmigrants apparently de-emphasize rice production over time, they also start to try to grow other foodcrops and, in some cases at least, treecrops for the market. Cassava is so widely grown on transmigration sites to the extent that where cassava processing mills are not in the area, the market may be glutted and transmigrants may receive very low prices. At the same time, the endeavors of transmigrants to diversify production and to maximize local opportunities by planting a wide variety of food and cash crops are everywhere apparent, even though with few exceptions, there is very little direct support for this diversification.

Table 10 presents Government figures on the production of selected food crops. Since in several cases the figures suggest levels of land under production in excess of four hectares when house and rice land are included (see Appendix Table A6), and survey data shows that an average total of about 2 hectares under production per household, the figures appear to overestimate either area under production or levels of land productivity. Concerning land productivity, once again available case studies show levels of production on transmigration sites to be significantly lower than those reported in Table 10.¹ Although such differences could result from differences in sample and timing of information gathering they are nevertheless consistently higher than the micro-level case studies suggest.

With the foregoing comments in mind, the figures in Table 10 indicate that in several provinces, notably West Sumatra, Jambi, and Irian Jaya (for soybeans), transmigrant production equals and even far exceeds 1983 levels of production in the province. Given that in some of these cases, such as Irian Jaya, transmigrants are the first major producers of these crops, the findings may be of little surprise. Nevertheless, if accurate, they represent a substantial contribution to the regional level of production in these provinces. In all other provinces, the levels of production of food crops show mixed results in relation to local production. While production of maize appears to be below the level of representation which transmigrant households have in the province, the production of peanuts in some provinces, such as South Sumatra, Lampung, West Kalimantan, Southeast Sulawesi and Maluku, and the percentages for soy beans are even higher.

Before making further interpretations of the foodcrops, Table 11 shows the level of treecrop production reported for transmigrants in receiving provinces. Since the figures are in terms of number of trees rather than in production or marketed amounts, they are difficult to interpret. In their own terms they indicate that with the exception of coconuts in South Sumatra and Bengkulu, and clove trees in Bengkulu and Jambi (and to a lesser extent West Sumatra and Riau), the share is quite low. But given the recency of arrival of most transmigrants and the relatively long period of time required for treecrops to reach maturity, the low levels may be more reflective of the current rather than the near-future situation. At the same time, however, and with few exceptions -- the most notable being the rubber production in Baturaja (South Sumatra) -- the question of how far the Government should or can go toward directly supporting treecrop production remains an unresolved issue. Although new attention is being given to it, the proportion of transmigrants who

¹ In the studies three provinces of Jambi, South Sumatra and South Kalimantan the range for peanuts was 0.2 - 0.9 tons/ha., which stands in contrast to the range of 0.4 - 1.3 in Table 10. For maize the range in the studies was 0.2 - 0.5 tons/ha., in contrast to 0.5 - 1.1 level in Table 10. For soybeans, the range in the studies was 0.1-0.5 tons/ha.; in Table 10 it is 0.3 - 0.9. Finally, for cassava, the range in the studies was between 1.6 to 2.6 tons/ha. in contrast to the Table 10 range of 2.8 - 4.5 tons/ha.

TABLE 10 TRANSMIGRANT SHARE IN PROVINCIAL (NON-RICE) FOODCROP PRODUCTION*

PROVINCE	TRANS HH	---MAIZE---		-- PEANUTS--		--SOY BEANS--		--CASSAVA--	
	% PROV. FARM HH.	TONS	% PROV.	TONS	% PROV.	TONS	% PROV.	TONS	% PROV.
ACEH	3.4	455	9.5	403	4.1	85.0	0.3	4,329	9.6 [†]
N. SUMATRA	0.7	464	0.6	133	1.1	54.0	0.9	441	0.2
W. SUMATRA	1.1	321	2.1	6624	92.5	2138.0	273.1	-	-
RIAU	14.1	1,794	5.1	518	16.1	557.0	23.6	1,638	2.4
JAMBI	11.3	2,380	121.5	1541	122.2	955.0	99.0	13,185	14.4 [†]
S. SUMATRA	15.3	2,225	11.1	3764	29.4	1839.0	37.3	2,844	1.6
BENGKULU	10.1	765	10.7	297	8.7	187.0	14.8	4,520	17.2 [†]
LAMPUNG	7.0	8,392	6.4	1760	29.0	6007.0	37.8	2,626	0.3
W. KALIMANTAN	7.7	760	8.7	379	55.8	-	-	6,835	6.0
C. KALIMANTAN	17.0	389	8.7	5	2.6	175.0	116.7	1,425	2.2
S. KALIMANTAN	7.3	591	7.8	177	1.6	87.0	8.9	-	-
E. KALIMANTAN	13.1	1,571	13.4	342	16.7	66.0	4.8	378	1.0
N. SULAWESI	1.4	857	0.4	110	2.0	928.0	8.1	398	0.3
C. SULAWESI	9.1	3,985	7.5	551	17.4	977.0	27.4	3,105	5.4 [†]
S. SULAWESI	0.7	182	0.0	14	0.0	272.0	2.9	617	0.3
S.E. SULAWESI	13.1	3,658	4.9	1152	56.4	267.0	8.3	5,278	1.5
MALUKU	4.6	483	4.7	370	27.9	266.0	231.3	407	0.9
NTB	0.4	699	1.7	10	0.1	16.0	0.0	215	0.2 [†]
IRIAN JAYA	10.4	699	18.5	396	49.1	1152.0	97.5	1,022	3.8
E. TIMOR	0.3	16	-	1	-	0.8	-	-	-
TOTAL	5.9	30,670	2.6	18546	15.1	16028	11.2	66,325	2.4

*Data on provincial production refers to 1983 from BPS, Statistic Yearbook 1984.

Data on Transmigrant production from Dir. Jen. Pengerahan dan Pembinaan, Dir. Bina Usaha Ekonomi, Buku Data Usaha Tani from reports of June to August, 1985.

[†]Based on an average of more than 2 ha./household under cassava (see Appendix Table A6).

TABLE 11 TRANSMIGRANT SHARE OF PROVINCIAL CASHCROP TREE STOCK*

PROVINCE	COCONUTS		COFFEE		CLOVES		RUBBER	
	TREES (1000)	% PROV.	TREES (1000)	% PROV.	TREES (1000)	% PROV.	TREES (1000)	% PROV.
ACEH	90.1	1.5	202.3	0.5	43.6	1.0	68.0	0.5
N. SUMATRA	31.4	0.3	49.1	0.1	36.7	1.0	8.5	0.0
W. SUMATRA	57.4	1.2	400.9	1.9	132.9	4.5	0.5	0.0
RIAU	213.4	0.5	205.5	2.4	84.5	4.4	0.0	0.0
JAMBI	348.9	3.4	457.3	1.7	225.9	19.3	504.4	0.5
S. SUMATRA	571.4	10.3	-	-	215.6	7.7	-	-
BENGKULU	140.2	19.7	1127.1	1.0	538.1	27.8	-	-
LAMPUNG	128.3	1.1	550.0	0.2	822.7	7.1	-	-
W. KALIMANTAN	83.6	-	63.9	-	49.8	-	-	-
C. KALIMANTAN	159.9	-	53.0	-	34.4	-	-	-
S. KALIMANTAN	219.3	-	224.3	-	213.1	-	-	-
E. KALIMANTAN	50.9	-	163.7	-	67.5	-	0.8	-
N. SULAWESI	12.9	0.1	16.2	0.4	0.2	0.0	-	-
C. SULAWESI	76.4	1.1	90.8	1.8	101.9	1.9	-	-
S. SULAWESI	40.4	1.1	25.6	0.1	27.2	0.4	-	-
S.E. SULAWESI	137.2	3.6	159.3	1.3	21.4	3.1	-	-
MALUKU	18.2	0.1	4.2	0.2	3.3	0.1	-	-
NTB	0.4	-	-	-	-	-	-	-
IRIAN JAYA	78.8	2.8	87.5	11.0	9.7	2.7	-	-
E. TIMOR	0.8	0.0	0.0	0.0	0.0	0.1	-	-
TOTAL	2459.8	-	3880.6	-	2628.5	-	582.2	-

*Data on provincial production refers to 1983 from BPS, Agriculture Census 1983, Table 5.0. Data on Transmigrant production from Dir. Jen. Pengerahan dan Pembinaan, Dir. Bina Usaha Ekonomi, Buku Data Usaha Tani from reports of June to August, 1985. Data on rubber trees in South Sumatra not included.

were moved to estate settlements declined from 18 percent of the total under Repelita II to 4 percent under Repelita III, with an average for the two plans of 6 percent (Appendix A10).

By way of introduction to Section 3, the discussion on foodcrops can be summarized at this point by suggesting that the potentially high regional impact indicated by available provincial level data must be weighed against other survey and case study data which show that the actual marketing of food and treecrops is both small in amount and, for the most part, extremely localized. Treecrops, in particular, have not played a significant role in either household incomes or regional production to date. As such, the primary impact of agricultural production has been in the sphere which transmigration planning had originally envisaged, namely, creating the subsistence base for transmigrant household welfare.

3. The Integration of Transmigrant Activities into the Regional Economy

Data presented in the foregoing sections has for the most part referred to additions to regional stocks -- land, roads, quantities of crops -- but do not give a direct indication of the extent to which these stocks have contributed toward boosting regional economic growth or, in a negative sense, have merely added people (and limited levels of production consumed at home) who subsist at low levels of productivity independently of the regional economy. Sorting out the issues related to these polar possibilities is a complex task, much of which lies beyond the capacity of this report to effectively tackle. Nevertheless, attempting to address them is, at this juncture when new and accelerated targets for transmigration have been adopted, an important task in understanding the longer-term impact and direction of the program.

A preliminary question to be asked is what are the expectations concerning regional development which can be associated with the movement of people into a region via the transmigration program. In part, the answer may be that very little is or should be expected from moving poor people into relatively remote areas on marginal lands. The physical isolation of sites, the foodcrop-for-home-consumption emphasis of the farm model, and the direct supply of most inputs by government sources in the early years of development all suggest that a significant period of 'incubation' is required in which the sites remain physically and economically removed from the regional economy. This, coupled with the rapid deterioration of roads and recorded low levels of marketed agriculture commodities noted in Section 2, suggests other elements of the realities of transmigration site development which work against a strong economic impact.

On the other hand, recent studies reveal how transmigrants rapidly devise their own economic strategies, strategies which are in some ways at odds with the two-stage food-first-cash-income-later model of development put forward by the Government. The amount of interaction with the regional economy in terms of employment and perhaps even selling of non-rice agricultural surpluses and purchases of consumer goods may be much higher than expected by this model. As yet, however, documentation of this interaction is very limited. In this Section, the purpose is to try to piece together fragmentary, and often indirect, evidence which can better illuminate current levels of transmigrant participation in the regional economy.

A major premise behind this investigation is that although the current approach toward transmigration development contains little impetus for economic growth within it, transmigrants nevertheless seek out opportunities in the region to earn incomes, using their farms as sources of security while expanding and diversifying income earnings in a manner not dissimilar to that readily observed on Java, including seasonal and circular migration to distance employment opportunities and the recruitment of kin and others from home villages as employment opportunities are found.

To put the same premise from the perspective of the region, to the present transmigrants have primarily brought their labor power to the regional economy, with the long-term integration of transmigrants into the region dependent on economic forces which are essentially exogenous to the development of transmigrant farms. The underlying evidence supporting this premise is that under existing conditions, and given the type of economic survival strategies adopted by transmigrants, the acceleration of production on transmigrant farms is difficult to envisage without a strong injection of economic support and stimulus from the region itself.

This implies that the regional variations in transmigration development, and the opportunities for such development, may be great. In some regions the growth of plywood and natural resource-based industries may be able to successfully marry the rapid increase in supply of labor with new demands for labor in the region. In other regions without an exogenous economic growth stimulus, the prognosis cannot be as sanguine. In either case, however, the current approach to planning, which keeps transmigration development in isolation of the local provincial planning process, undoubtedly misses opportunities for transmigration sites to pass from subsistence and toward mutually beneficial development with the region.

The analysis below has two major aspects. An attempt is first made to determine the sources of employment and income of transmigrants by drawing from both case studies of individual transmigration sites and the results of a 1984 BPS survey of transmigrant incomes and expenditures. Secondly, the question of whether the income received is likely to stimulate regional economic development through direct and indirect multipliers is explored.

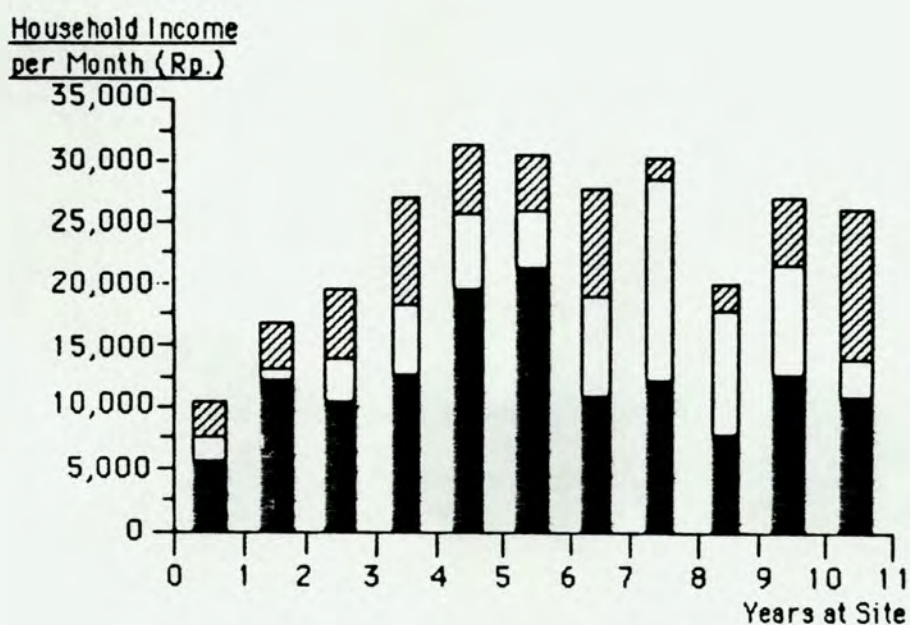
3.1 Sources of Transmigrant Incomes

The major question of concern at this juncture is whether or not transmigrant incomes are gained independently from interaction with the region, or whether transmigrants gain increasing incomes from the sale of their own production and serve the region as agricultural producers, or whether their interaction is mainly one of providing labor and skills for exogenously generated production activities. Although a mix of the above is likely to be found in most cases, the evidence suggests the latter case of dependence upon exogenous factors may be proportionally higher than the first two. This is partly due to the inability of transmigrant farms to generate either incomes sufficient to raise households incomes over time, an official objective of transmigration, or to lead to commercial viability in agricultural production. It is also due to the long experience of Javanese rural people to maximize income security through diversification of employment within the family, including temporary and seasonal migration.

3.1.1 all transmigration sites

Figures 8 - 10 give a preliminary indication of sources of income of transmigrants. Figure 8 shows the distribution of income for all sites by three categories (food crops, other agriculture,

FIGURE 8 SELECTED SOURCES OF TRANSMIGRANT HOUSEHOLD INCOME, ALL SITES 1984 *



SOURCE OF INCOME

■ FOOD CROPS □ OTHER AGRIC. ▨ NON-AGRIC.

*Income from directly productive activities only; totals do not equal total household incomes.

source: BPS, Transmigrant Income Survey, 1984.
See Appendix Table A7

non-agriculture) of income and the length of time at the site. Figures for agricultural production do not necessarily imply that the produce was sold or traded; they cover both production for household consumption and marketed commodities. And since income from pensions, transfers, remittances and government support are not included, they do not represent total household income; they attempt only to capture the relative contribution to household incomes of directly productive activities, i.e., employment generated through transmigration.

The figures suggest, first, that income from food production reaches a peak within a few years and then declines. The possible reasons for this -- ending of direct government support, declining soil fertility, the appearance of more remunerative employment opportunities -- have been discussed above. Secondly, the figures indicate no clear trend with regard to either other agriculture or non-agriculture income over time, except to say that there is an appearance of a substitution of food production with a combination of the two after the fifth or sixth year, although total income from the three sources does not appear to reach the midterm levels.

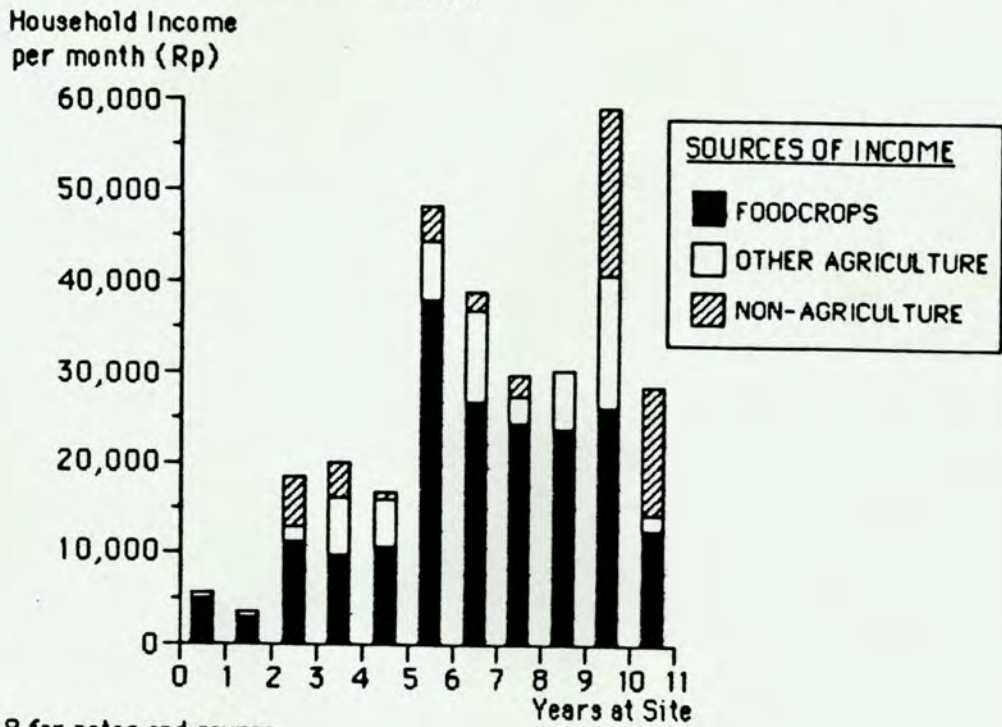
Since the data are cross-sectional rather than time-series, there is danger in interpreting them as trend data. A number of variables other than length of time on the site can be responsible for the composition of income. For example, the earlier sites contained a higher proportion of estate settlements, and the Repelita III sites contained a higher representation of tidal sites, some of which were themselves more favorably endowed than later sites (Appendix Table A10). There are also variations related to type of settlement layout, soil fertility and other characteristics which may explain differences to a better degree than the implicit time variable in the cross-sectional data.

Figures 9 and 10 attempt to control some of the variation by showing the differences between tidal and dryland sites. Interestingly, both figures indicate a peak of income from food production by transmigrants who have been in their sites for about five-to-six years. For tidal sites, however, the levels of income imputed to food production appear to stay at higher levels over time than they do on dryland sites. At the same time the older dryland sites appear to show a high contribution of income from other agricultural sources, which include animal husbandry and treecrops, than the tidal sites, which show higher proportions of income from non-agricultural activities. Such differences could be related to a host of factors, but the low contribution of food production in the dryland sites, which comprised 70 percent of the Repelita II and 72 percent of the Repelita III sites, strongly suggests that, as argued before, food production plays a diminishing -- albeit important -- role in the composition of total household income from productive activities.

3.1.2 three sites in South Sumatra

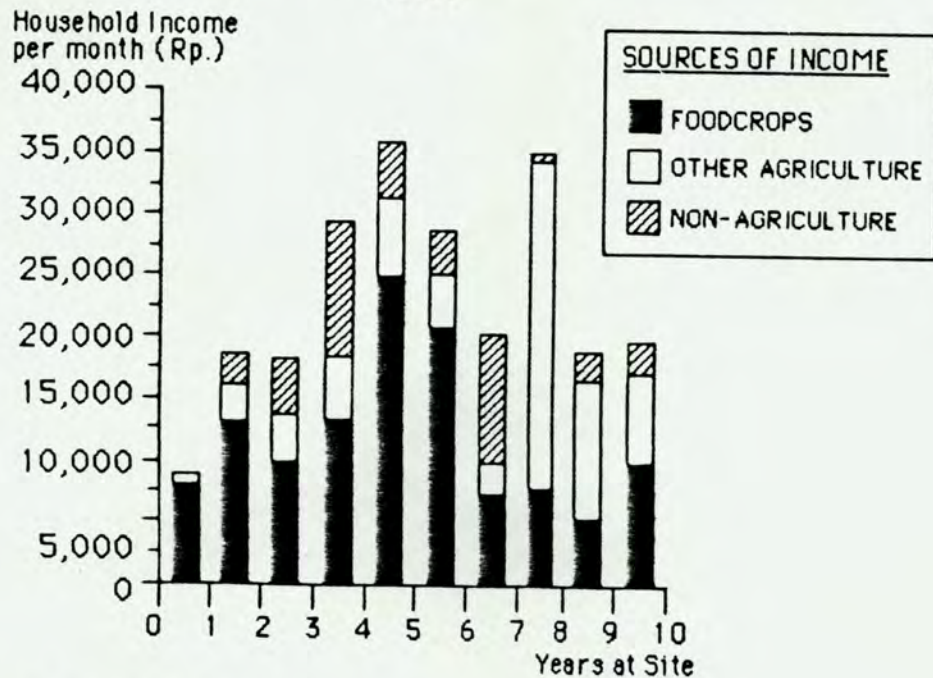
Table 12 attempts to control for the differences in provincial setting by comparing three types of sites within a single province, South Sumatra (Figure 11). Both Baturaja and Pematang Panggang are upland sites, but while Baturaja has a large rubber crop component, has received a substantial higher than average caretaking from national and international sources (World Bank), and is relatively well-connected to the rest of the region (albeit with severely deteriorated roads), Pematang Panggang, which initially had a rubber component which declined due to lack of support, depends largely on foodcrop production, has poor road linkages with the region, and is regarded as one of the poorer sites in the province. Air Sugihan is a tidal swamp site with soils of much lower quality than the first generation of tidal swamp sites (notably Upang), was established more recently than the other two, and is located some 8 hours by boat (2-3 hours by speedboat) from the capital of Palembang, the nearest city.

**FIGURE 9 SELECTED SOURCES OF HOUSEHOLD INCOME, TIDAL SITES
1984**



*See Figure 8 for notes and source

**FIGURE 10 SELECTED SOURCES OF HOUSEHOLD INCOME, DRYLAND SITES
1984**



*See Figure 8 for notes and source

TABLE 12 AVERAGE INCOME BY ORIGIN, 3 SITES, SOUTH SUMATRA (Rp. 1000)

SITE/ VILLAGE		SAMPLE SIZE	GOVT. SUBS.	FOOD CROPS	ESTATE CROPS	LIVE- STOCK	OTHER AGRIC.	NON- AGRIC.	OTHER	GOVT. NET ORIGIN	NET TRANS.	TOTAL
BATURAJA	1	80	0.2	7.6	8.0	0.7	0.4	38.9	28.1	0.4	26.8	51.8
	2	60	0.2	10.2	1.7	4.6	1.3	58.0	37.1	8.1	0.5	62.7
	3	40	0.2	9.4	38.0	2.9	0.9	22.6	31.2	3.2	10.4	86.0
PEM. PANG.	1	40	0.0	14.5	0.0	6.2	0.2	38.3	8.5	1.8	8.7	35.7
	2	201	0.1	13.3	0.3	2.6	0.1	21.0	34.1	2.1	5.0	56.1
	3	241	6.9	11.4	0.2	3.2	0.4	11.8	26.2	0.8	5.3	44.8
AIR SUGIHAN	1	120	6.9	13.3	0.0	2.5	1.2	41.6	12.8	2.3	7.6	35.6
	2	101	8.4	12.5	0.0	1.3	2.5	15.5	32.1	3.5	-2.1	55.3
TOTAL		883										
AVERAGE (U)		-	2.8	11.5	6.0	3.0	0.9	31.0	26.3	2.8	7.8	53.5
AVERAGE (W)		-	3.8	11.8	2.7	2.7	12.0	25.7	27.2	2.2	6.7	50.6
Coeff.Var. (U)		-	1.2	0.2	2.0	0.6	0.8	0.5	0.4	0.8	1.1	0.3

Source: BPS, Transmigrant Income Survey, 1984.

(U) = unweighted; (W) = weighted by share of sample households.

Averages are apparently for only those households involved in the respective activities, they do not sum to the totals shown in the last column.

FIGURE 11 TRANSMIGRATION SITES IN SOUTH SUMATRA



Transmigration Sites
■ Survey Sites
▣ Other Sites

Source: Kanwil, Dept. Transmigration,
Sumatra Selatan

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Although Table 12 is not detailed enough to indicate sources of non-agricultural income, it does show that, using averages weighted by the sample size from each site, non-agricultural incomes equal from two to three times the income derived from agriculture. Equally revealing is the low coefficient of variation for foodcrop and other agriculture. This suggests that in these categories the opportunities are approximately the same regardless of type of site. The variables which seem to make the difference in incomes are, first, the presences of estate crops (in one village in Baturaja), net transfers into the villages, and government spending, the latter of which takes two major forms: direct subsidies in the first years after arrival to all transmigrants, or pension payments to retired civil servants who have been included in the transmigration program.

At the same time, the weighted average income of the Baturaja is about Rp.15,000/month higher than Pematang Panggang and Rp. 19,000 above Air Sugihan. Both of the latter two have average site incomes below Rp. 50,000 which (see below) can be taken as a rough estimate of basic needs level poverty line. It is important to note, however, that differences among villages within the same sites are also great, reflecting not only timing of arrival and efficacy of support programs, but also, *inter alia*, land quality and relative isolation of villages within the sites at the micro-level.

In other words, the data tend to confirm the observation that on-farm activities, although they may be basic to household welfare, are not the main source of income, nor are they the leading edge of economic growth associated with transmigration. Rather, transfers, government payments, and non-farm work, loosely defined, tend to make the difference between poverty and relative affluence.

3.1.3 Pematang Panggang

A further breakdown of employment and income sources is not available for the three South Sumatra sites, but an independent study of one, Pematang Panggang, expands on the points previously made. Table 13 shows a relatively low level of productivity of land and, at an average of 1.45 hectares, a small amount of total area being cultivated, suggesting that for a variety of reasons the production of foodcrops has not become the major household income-earning activity. Table 14 places crop sales within the overall composition of employment and income earnings. Although the value of food for own consumption is not included in the table, the data indicate that the selling of foodcrops to other transmigrants and to the province represents a very small amount of the income received. The selling of goats and chickens provides several times the income derived from crop production, but this is still less than income gained through work in non-agricultural employment. It is worth noting, however, that the number of days worked per month in non-agricultural activities, with the exception of petty trade, is stated to be limited and undependable.

3.1.4 transmigration sites in Jambi

The recent study of eight transmigration sites (Euroconsult, 1983) in Jambi give a number of insights into their process of development and relations with the rest of the region. The group of six sites in Singkut were all settled between the years 1974 and 1979. Farmers in these sites had quickly moved away from rice and toward treecrops as a main source of agricultural income. In only one site was the sale of foodcrops more important than tree crops in terms of cash incomes. In contrast to this, however, the very new sites at Kubang Ujo showed that 50 to 80 percent of cash incomes came from the sale of foodcrops (cassava and peanuts). Given that trees take a longer time to mature, the newness of the sites, which were opened only 1-2 years before the survey, could explain the differences. Four out of the six Singkut sites have approximately three times the

TABLE 13
 LAND USE AND PRODUCTIVITY, PEMATANG PANGGANG
 1982/83

	CULTIVATED AREA	PRODUCTIVITY (Kg/Ha)
RICE	0.73	470
CASSAVA	0.28	1665
MAIZE	0.23	455
PEANUTS	0.08	199
SOYBEANS	0.01	157
SWEET POTATOES	0.04	800
RED PEPPERS	0.04	225
VEGETABLES	0.04	525
TOTAL	1.45	-

based on survey of 123 household heads.

Source: Pengembangan Pematang Pangan I Tahap KE II
 Universitas Sriwijaya and Bappeda Tingkat I
 Sumatra Selatan, 1984, Tabel 10.

TABLE 14 MONTHLY HOUSEHOLD INCOME BY SOURCE 1981/82
PEMATANG PANGGANG*

	---SELLERS---		-AMOUNT SOLD (Rp'000)-			AVE. % ALL HH. INCOME ¹
	NUMBER ALL HH	(%)	PER SELLER TOTAL	-----(Rp'000)----		
FOODCROPS						
			(Kg.)			
RICE	27	22.0	78.52	8.28	1.82	4.0
CASSAVA	21	17.1	87.5	1.97	0.34	0.7
MAIZE	14	11.4	16.08	1.26	0.14	0.3
PEANUTS	17	13.8	13.75	2.29	0.32	0.7
SOYBEANS	2	1.6	1.2	0.45	0.01	0.0
SW. POTATOES	7	5.7	5.9	0.2	0.01	0.0
RED PEPPERS	7	5.7	0.75	0.79	0.04	0.1
VEGETABLES	6	4.9	1.38	0.44	0.02	0.0
LIVESTOCK						
			(No.)			
CATTLE	16	14.3	0.16	19.06	2.72	6.0
GOATS	45	40.2	1.36	15.34	6.16	13.6
CHICKEN	91	81.2	12.95	13.13	10.67	23.6
DUCKS	2	1.8	0.17	0.21	0.00	0.0
AGRIC. LABORER						
			(days/mo)			
AGRIC. LABORER	45	40.2	21.89	13.86	5.57	12.3
NON-AGRIC.						
			(days/mo)			
CARPENTER	16	14.3	11.85	13.2	1.89	4.2
WOOD SAWING	18	16.1	7.48	6.92	1.11	2.5
TEACHER	5	4.5	14.46	16.72	0.75	1.7
TRADE	12	10.7	23.57	13.53	1.45	3.2
PENSION	7	6.2	-	49.57	3.10	6.9
OTHER	28	25.0	25.81	36.26	9.06	20.1
TOTAL/AVE.	112	100.0	279	45.2	45.18	100.0

*based on a sample of 112 household heads.

¹number of sellers/workers prorated over the total 112 respondents.

Source: Pengembangan Pematang Panggan I Tahap KE II (universitas Sriwijaya and Bappeda Tingkat I Sumatra Selatan, 1984), Tabel 3.

number of cashcrop bearing trees than the Kubang Ujo sites. It is predicted, however, that in both settlement areas, the production of estate crops (cloves) will soon take over from both fruit tree and foodcrop production as the main source of agricultural income.

Concerning rice (see Table 9 above), 7 percent of the growers in Singkut had no rice harvest at all, and another 35 percent had yields below 200 kg./ha. Only 13 percent had yields higher than 600 kg./ha. Swampy land and stagnant water combined with insufficient supplies of insecticides were reasons given for failures and low yields.

Despite the attempts to grow cashcrops for the market, the cash incomes of the transmigrants from agriculture were found to be less than half of those obtained from agriculture by non-transmigrant villagers in the surrounding region, indicating that if incomes were to equal those of farmers in the region, transmigrants had to engage in high levels of non-agricultural production and employment. Due to the relatively specialized nature of regional agricultural production, which is oriented toward rubber production, the extent of non-agricultural employment was, in fact, found to be much higher among transmigrants than in the surrounding region. Whereas more than two-fifths of the local villagers had no non-agricultural employment whatsoever, 84 percent of transmigrants were engaged in some form of non-agricultural activity in the Singkut and Kubang Ujo sites together.

Table 15 shows the distribution of non-farm employment and income in the eight sites.¹ Concerning the pit-sawing and unskilled labor categories, to the extent that neither requires significant amounts of capital or high skills, they may be interchangeable, depending upon season and opportunity. The pit-sawing activities are, however, described as being unstable due to the dwindling amounts of usable wood in the area. The figures reveal that from 55 to almost 100 percent of the non-agricultural workers are engaged in these activities in the Singkut sites, although the proportions are quite small in the newer sites.

In comparison small trade activities are run by 7 to 27 percent of non-agricultural workers. The study maintains that anyone with skills in trade has little trouble in finding work in this sector. It notes, however, that the isolation of the sites has meant that local markets for the sale of agricultural commodities is very limited, with up to 70 percent of produce being sold at the farmgate and 88 percent is sold to traders. If evidence from other sites is relevant, this is also indicative of low prices received for agricultural products.

Skilled work comprised from 7 to 20 percent of the surveyed labor force on the Jambi sites. This appears to be significant, but since it includes pensioned civil servants, it is therefore difficult to conclude that skilled work is either generally found or is being generated on the sites. Nevertheless, the study states that a full 9 percent of the transmigrants have found employment in the civil service.

Concerning income derived from non-farm activities, its share in total income shown in Table 15 is reported to range from a low of 14 percent in the newer sites to in excess of 80 percent in the older sites. Especially in the older sites, the levels clearly indicate the low position which agricultural production plays in the formation of the disposable incomes of transmigrants.

¹ note that 'non-farm' may include agricultural work as agricultural labor, and should not therefore be taken to be strictly equated with 'non-agricultural' employment.

TABLE 15 DISTRIBUTION OFF-FARM EMPLOYMENT AND INCOME, JAMBI 1982/83

Settlement	KU 2	KU 1	SK 7	SK 5	SK 4	SK 3	SK 2	SK 1
Number of Years Estab.	2	3	4	5	6	7	8	9
EMPLOYMENT (%)								
Unskilled Labor	12	30	7	10	3	20	10	60
Pit Sawing	1	3	45	47	77	40	60	37
Petty Trade	13	20	13	7	27	10	27	7
Skilled Labor	9	10	7	7	7	13	20	-
TOTAL	35	63	72	71	114	83	117	104
NON-FARM INCOME (%) -----								
Unskilled Labor	3	24	3	6	1	14	11	37
Pit Sawing	-	8	28	51	70	36	52	50
Petty Trade	6	23	7	7	11	39	12	9
Skilled Labor	5	10	7	8	8	7	10	-
TOTAL	14	65	45	72	90	96	85	96

*source: Euroconsult, "Transmigration II Project Jambi Province, Quarterly Report No. 6 (April - June 1983), Tables 5 & 7.

Of particular interest are the findings in the Jambi study which indicate that, with the exception of petty trade, off-farm employment in general requires temporary migration. As mentioned, pit sawing, for example, soon exhausted local timber supplies and moves further afield, requiring migration in order to continue the activity. In other words, the sites per se do not generate significant amounts of stable non-agricultural employment in this region. If this is the general case, it reinforces the thesis that transmigration is, in the main, primarily providing labor power for the regional economy and is not, in and of itself, generating increases in per capita value added in the regional economy.

3.1.4 Sebamban I, South Kalimantan

A study of Sebamban I, a transmigration site located 220 kilometers from Banjarmasin on the Banjarmasin-Pagatan road in South Kalimantan, was carried out from September 1982 to June 83 (Levang and Marten, 1984). As a preliminary remark, the study team noted that given its location in an area covered with *alang-alang* and on very poor soils, the site, which received its first transmigrants in late October 1979, should never have been accepted for transmigration. Having said this, it then goes on to detail how transmigrants have devised a number of strategies, including the selling of their belongings, in order to create a viable existence in this area. Given that the drought of 1982, coupled with wereng infestations, brought near total disaster to the foodcrops production on the site, the transmigrants turned toward non-agricultural work as a means of meeting even their basic food and material needs. Food self-sufficiency was deemed to be impossible under existing physical and institutional conditions.¹ Abandonment of the site has not, however, occurred to any significant extent.

Given the difficulties in food production, a number of households have planted treecrops, especially cloves. What was considered to be a normal year rice yields in 1981-82 averaged 569 kg./ha. among the survey group, resulting in only 10 percent of the families being able to meet their subsistence needs. Unlike the report from Jambi, which noted large levels of surplus labor on the transmigrant farms, the labor needs for clearing land and caring for agricultural production to the extent to which holdings would allow were said in the Sebamban I site to be greater than the supply available. Furthermore, the costs of producing other food crops, such as peanuts and soybeans, were found to be greater than the revenues from their sales. The study concludes that crop production will never be anything other than an auxiliary for the transmigrant and not a stable source of income sufficient to feed transmigrant families. For almost all households, non-agricultural wage work is the only means of ensuring economic survival. Such non-agricultural activities are reported to bring an average of 71 percent of the total income in the site.

Table 16 shows the range of employment activities carried out by surveyed transmigrants in Sebamban I during 1982/83. Work as day laborers was the most common. As noted in Jambi, migration was required to obtain this work in South Kalimantan as well. Plantation work at Karang Bintang, located 20 kilometers away from the site, digging jobs in Pagatan, 17 kilometers away, and Kota Baru, 80 kilometers away all required at least temporary movement away from the site. Most interestingly, work as unskilled labor included road construction as far away as Banjarmasin and East Kalimantan -- several hundred kilometers away from the site. The study

¹ referring again to the issue of roads on transmigration sites, the study notes that the separation of 15 kilometers between the administrative center and the most distant block on the transmigration site was one of the main causes of the delays and even failures in delivery of supplies to the transmigrants.

TABLE 16 SOURCE OF NON-AGRICULTURE EMPLOYMENT AND INCOME,
SEBAMBAN I, SOUTH KALIMANTAN 1982/83 (Rp.'000)

ACTIVITY	CASES	INCOME PER DAY	--ANNUAL INCOME--		-IMPLIED INC./MO.-	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
DAY LABORER	30	22.50	30	300	2.50	25.00
TRADE	16	NA	30	1800	2.50	150.00
CRAFTSMEN	16	22.50	15	240	1.25	20.00
FINANCIAL AID*	10	NA	5	525	0.42	43.75
FARM LABORER	9	1.50	10	90	0.83	7.50
WOOD GATHERING†	5	2.57	30	360	2.50	30.00
SALE OF BELONGINGS	5	NA	50	2000	4.17	166.67
PENSIONS	4	NA	90	240	7.50	20.00
AGRIC. PROCESS.	3	3.50	62	87	5.17	7.25
TRANSPORT**	2	1.50	30	75	2.50	6.25
HUNTING	1	NA	300	300	25.00	25.00
TOTAL/AVERAGE	60	NA	59	836	4.94	45.59
WEIGHTED AVE.**	60	NA	51	1020	4.26	84.96

Source: P. Levang and R. Marten, Sebamban I, Agro-economic Survey of a Transmigration center on South Kalimantan (Dept. Transmigrasi, 1984).

* from home province

† rattan, ironwood

** bicycle

**weighted by share of sample.

states that because local non-agricultural activities are scarce, workers leave the site for 10- to-30 day periods during the agricultural slack season. This has happened to the extent that in May of 1983 only two out of 115 families in Block H of the transmigration site were present, and that was because they were ill.

Trade, the second most prevalent activity along with 'craftsmen', consisted mostly of food selling either at the site or in Pagatan Market. Some small shops selling dry goods existed which provided credit as well, although default on loans was reported to be very high, and the shops did not do well. Between 1981 and 1983 the twenty or so shops were reduced to two in number.

The craftsmen category covered both unskilled and semi-skilled work, including pit-sawing, house construction and woodworkers. Such work, although remunerative, was characteristic of the early days of site establishment, but was reported to be dwindling by 1983.

Two of the remaining income sources -- pensions, sale of belongings -- could hardly be called productive, although the pensions may inject cash into the transmigrant economy. The others -- wood gathering, agricultural processing, bicycle transportation and hunting -- either involved very few people or very low remuneration, or both. The overall range of minimum and maximum incomes is quite high, however, signaling with other evidence presented a highly skewed income distribution with a great number of poor households and a few high income ones.

The Sebamban I experience, and to a slightly lesser extent the Jambi experience, illustrate the problems encountered in inserting transmigration sites into areas which themselves provide little exogenous sources of employment. The study of Sebamban concluded that employment possibilities were drying up in the area, and as more settlers came into the surrounding transmigration sites, competition in the nearby town of Pagatan (1980 population of 2343) was resulting in stagnating wages and the probability of falling wages in the future. As a response, the transmigrants have gone further afield to other parts of the region and other provinces in search of employment.¹

¹ Despite the hardships reported in many sites, transmigrants appear to prefer not to return to Java. Temporary and seasonal migration is reported in both Jambi and South Kalimantan, and in a report from south Irian Jaya, people who have abandoned their sites in Salor II (although widescale abandonment is reportedly rare, due to unexpectedly poor soils Salor II now has only 185 households remaining from an initial number of 500) have moved to the city of Merauke to "presumably join the ranks of other (transmigrant) families already in Merauke where the wives reportedly become prostitutes (with their husband's approval) in order to survive" (CAG, 1985, p.8).

3.2 impact of expenditures

Related to the question of the impact of transmigrant production activities on regional economies is that of the impact of expenditures on generating demand for commodities which are produced in the receiving regions. A point of departure for this assessment is to divide transmigrant expenditures between food and non-food items to see the extent to which expenditures stay within the realm of agricultural commodities or move toward the consumption of semi-durable and durable consumer goods. It is assumed at the outset that some multiplier effect on agricultural production may be expected in markets very close to transmigration sites, or, conversely, via traders who bring food commodities to the sites. The strength of these expenditures in stimulating food production has not been documented in available studies. As with other aspects, however, regional variations may be great. In regions where such markets already exist, where transmigrants have frequent access to these markets, and where transmigrant numbers are themselves large, the impact may be significant. In more remote locations, or in regions where sedentary agriculture is not widely practiced, transmigrants probably depend upon their own internal markets for the consumption of vegetables, fruits, meat and fish.

Table 17 shows the percent of income spent on food by income class for various types of transmigrant sites. First it indicates a very high level of income consumed by basic food expenditures by all but the highest income classes. Equally important, and regardless of the type of site, the percent of income spent on food increases up to the level of approximately Rp. 50,000 per household per month, indicating that below the Rp. 50,000 level households do not have enough money to satisfy basic food needs. Estates, which presumably depend to a much greater extent on purchasing food than do other types of sites, are the only exception to this relationship, but they show even higher percentages of income spent on food by all income groups.

Tables 18 and 19 complement Table 17 by showing the cumulative distribution of income by income class beginning with the lowest incomes and arrayed, first, by time of arrival of the transmigrants and, second, by category of transmigrant. Table 18 indicates no apparent relationship between time of arrival and proportion of households below the Rp. 50,000 level, indicating that time in the site does not itself explain differences in income distribution. Table 19 separates the sponsored, who make up the vast majority of transmigrants, from other categories of transmigrants, and indicates that almost three-fifths of this group is below the Rp. 50,000 per month level.

Another way of approaching the same type of analysis is to use various estimates of the level of income needed to obtain a basket of food having a minimum level of nutrition. One such estimate adopted in a recent World Bank (1984) report is based on a per capita need of 16 kg. of rice per month multiplied by a coefficient of 1.25 to allow for other food purchases. By readjusting the 1980 figures presented in this report by the rate of inflation, and assuming a household size of five people (or 80 kg./month), the result in 1984 is slightly lower but close to Rp. 50,000/month per household of five people.¹

These estimates can be considered to be approximations only, and in this regard, the BPS

¹Uses a rural poverty line in 1980 of Rp. 5,800 per capita per month for the outer islands (World Bank 1984, Appendix 1, Table 1) times 5 (assumed family size), adjusted to 1984 by inflation rate for food 1981-84 (BPS, Statistik Indonesia 1984, Tabel 9.5.7), to equal Rp. 46,000.

TABLE 17 % INCOME SPENT ON FOOD BY TYPE OF TRANSMIGRATION SITE

EXPENDITURE*	DRYLAND	KCLK ¹	KBLK ¹¹	SWAMPS	ESTATES	ALL SITES
< 20,000	73.6	75.5	79.0	78.9	91.3	77.3
20 - 24,999	75.2	75.6	81.4	75.0	88.7	77.6
25 - 29,999	73.9	77.7	81.2	80.2	84.5	79.0
30 - 39,999	74.4	80.0	83.0	78.2	85.1	79.6
40 - 49,999	78.8	78.7	80.5	80.7	84.8	80.2
50 - 74,999	78.5	79.0	78.5	79.1	83.1	78.9
75 - 99,999	74.5	75.3	76.0	79.3	75.9	76.3
100-149,999	61.3	69.1	68.5	77.2	70.5	68.1
150-199,999	44.4	75.8	69.3	67.0	64.6	62.9
200-300,000	-	58.5	57.8	-	-	57.9

*Rp. per household per month; ¹small dryland; ¹¹large dryland.

Source: BPS, Transmigrant Income Survey 1984.

TABLE 18 CUMULATIVE DISTRIBUTION OF INCOME BY DATE OF ARRIVAL AT TRANSMIGRATION SITE (%)

INCOME RANGE	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	TOTAL
< 20,000	5.5	3.5	21.4	2.6	1.8	4.4	4.2	8.3	8.8	3.2	14.1	7.5
20 - 24,999	5.5	8.1	33.7	10.5	6.5	10.5	13.2	14.3	17.1	6.7	33.8	15.0
25 - 29,999	11.1	20.9	43.9	15.8	9.2	17.5	21.9	22.8	26.4	13.7	42.2	23.4
30 - 39,999	27.8	39.5	54.6	31.6	28.7	28.0	42.1	41.9	46.2	31.3	54.9	41.2
40 - 49,999	38.9	57.0	59.9	42.1	46.3	42.1	58.1	58.2	63.3	47.2	71.8	56.4
50 - 74,999	61.1	89.5	75.9	81.5	78.7	69.3	76.9	83.3	84.8	70.0	85.9	79.4
75 - 99,999	88.9	98.8	86.6	94.7	87.9	87.7	85.4	90.3	91.9	89.0	95.7	89.7
100-149,999	94.4	100.0	95.7	99.9	98.1	96.5	93.2	96.9	97.3	96.8	98.5	96.6
150-199,999	94.4	100.0	97.9	99.9	98.1	99.1	97.1	98.4	98.5	98.5	98.5	98.3
200-299,999	94.4	100.0	98.9	99.9	99.9	99.1	99.4	99.4	99.5	99.6	99.9	99.5
300-399,999	94.4	100.0	99.4	99.9	99.9	99.1	99.4	99.6	99.9	99.6	99.9	99.6
400-499,999	94.4	100.0	99.4	99.9	99.9	100.0	99.4	99.6	99.9	99.9	99.9	99.7
≥ 500,000	100.0	100.0	99.4	99.9	99.9	100.0	99.9	99.9	99.9	99.9	99.9	99.9

Source: BPS, Transmigrant Income Survey 1984.

TABLE 19 HOUSEHOLD INCOME DISTRIBUTION BY TYPE OF TRANSMIGRANT

UPPER INCOME*	SPONSORED		ARMED FORCES		SPONTANEOUS		LOCAL RECRUIT		TOTAL	
	(%)	CUM.(%)	(%)	CUM.(%)	(%)	CUM.(%)	(%)	CUM.(%)	(%)	CUM.(%)
20,000	7.5	7.5	9.8	9.8	0.0	0.0	8.1	8.1	7.5	7.5
25,000	7.9	15.4	7.2	17.0	0.0	0.0	5.9	14.0	7.5	15.0
30,000	8.9	24.4	8.5	25.5	0.0	0.0	5.4	19.3	8.4	23.4
40,000	18.3	42.7	19.6	45.1	0.0	0.0	16.7	36.0	17.8	41.2
50,000	16.2	58.8	13.1	58.1	5.3	5.3	11.3	47.3	15.3	56.4
75,000	23.7	82.6	19.6	77.7	12.3	17.5	22.0	69.3	23.0	79.4
100,000	9.0	91.5	13.7	91.5	26.3	43.8	15.0	84.4	10.3	89.7
150,000	5.6	97.1	5.2	96.7	36.8	80.7	11.3	95.7	6.9	96.6
200,000	1.5	98.7	1.3	98.0	12.3	93.0	1.1	96.7	1.8	98.3
300,000	0.9	99.6	0.6	98.6	7.0	100.0	1.6	98.4	1.1	99.5
400,000	0.1	99.7	0.6	99.3	0.0	100.0	0.5	98.9	0.2	99.6
500,000	0.0	99.8	0.6	99.9	0.0	100.0	0.0	98.9	0.1	99.7

Source: BPS, Transmigration Income Survey 1984, Table 6F.

*household income per month (Rp.).

Transmigrant Income Survey of 1984 shows conflicting findings concerning levels of food consumption. On one hand, the survey indicates that transmigrants on the average tend to consume more food than their counterparts in their province of origin. On the other hand, the data also show that transmigrants spend higher proportions of their income on food and also have lower average monthly expenditures than people in the sending provinces (Rp. 48,624 average for transmigrants versus Rp. 52,361 per household for sending provinces). At any rate, the conclusion is the same: the expenditures of transmigrants are overwhelmingly directed toward basic food purchases, and any increments to incomes below the Rp. 50,000 level tend to increase rather than reduce this propensity.

Looking at the case studies discussed above in Section 3.1 shows more clearly the nature of income expenditures in a few selected areas. The Euroconsult study of eight sites in Jambi confirm the high levels of expenditure of income spent on food (see Figure 7), and also indicates that because self-sufficiency in rice covers from a minimum of one month to a maximum of six months, depending on the site, rice purchases are necessary throughout most of the year. Since fruits are widely available on especially the older sites, they do not form a large part of expenditures, but nevertheless from 34 to 100 percent of all cash income in the sites is spent on four items: rice, salted fish, cooking oil and vegetables. As noted earlier, expenditures on rice increase over time. If cash surpluses are available after these expenditures, the main items consumed are reported to be bicycles, trips to Java, radios and house improvements.

The study of Pematang Panggang does not contain tabulated figures concerning consumption. It states, however, that current incomes would allow a per capita consumption of approximately 200 kg. of rice per year. Adopting a per capita poverty line of 240 kg. of rice per year (after Sajogyo, 1977), the report concludes that the transmigrants are very poor (*miskin sekali*).

The Sebamban I study in South Kalimantan states that under current conditions, there was little possibility of transmigrants investing in their farms, and that almost all of the income was used to buy such staple goods as rice, sugar, spices, oil, and dried fish. Somewhat in contrast to this statement, a number of what was termed 'exceptional expenditures' were documented. Out of a group of sixty transmigrants interviewed, 35 had one of the following: bicycle, radio, tape-recorder, petromax. 33 had managed some home improvements. 22 had managed to pay for visits to their native province; and 28 had made expenditures for ceremonies, schooling and health care. The study noted that the purchase of consumer goods such as radios was seen equally as a capital investment, since their scarcity meant that they could be resold at relatively high prices when cash was urgently needed. Trips to Java or Bali were viewed not only as a source of enjoyment but also as an important means of obtaining seeds, plants and money for agriculture and household welfare.

This study also noted the tendency for income spent on food to increase as incomes rise among lower income groups. The explanation was straightforward: as incomes increase, families increase rice purchases and reduce cassava intake; they also diversify sources of protein intake toward fish and soya-based foods.¹ For the site as a whole, and despite the examples of families having some

¹ Their study of eating habits on the site showed deficiencies in protein, with almost half (48%) of the meals containing neither animal nor vegetable proteins. Although the cause of this was a combination of low income and food scarcities, it was noted that the consumption of fruit was low primarily due to eating habits rather than to supply constraints (Levang and Marten, 1984).

'exceptional expenditures', an average of 70 percent of income was spent on food, lamp oil, tobacco and sugar. In contrast to the overall findings from the BPS survey, it concluded that levels of food consumption were below minimum levels of nutrition and were about the same as those in the transmigrants' province of origin. Only 6 percent was spent on agriculture production related items.

For a variety of reasons, these sites may not be typical of most other transmigration sites. Nevertheless, the evidence they present does not contradict the more general survey findings which strongly suggest that the primary multiplier of transmigrant consumption expenditures continues to be directed toward food production. Such an impact is not an unwelcomed one, although given the low median incomes of transmigrants, its magnitude is unlikely to be great. Furthermore, expenditures do not appear to generate demand for other types of activities except perhaps house improvements, which may or may not be carried out by transmigrants. The consumer goods which are recorded as being purchased are obviously imported from Java, suggesting that some expansion of local trade rather than manufacturing is the outcome of expenditures on these items. If evidence from sites in Lampung and Sumatra are repeated elsewhere, the widely noted expenditures on return trips to Java also serve the purpose of purchasing even simple farm tools which are either cheaper or considered to be more durable than local implements.

4. The Impact of Transmigration on Local Institutions

4.1 financial resources for development planning

One aspect of the transmigration often put forward as having a positive impact on receiving provinces is the redistribution of government financial resources implicit in the budgetary allocations given to the program, which move spending away from Java and toward the outer island provinces. Such large movement of investment resources, it is argued, would not otherwise be justified under existing population distributions. This raises the question of not only the spatial distribution of transmigration program expenditures but also of the relationship between local and central government financing and planning for development in the receiving provinces.

Before going into quantitative evaluations, a brief description of the relationships between transmigration planning and both local government and centrally-controlled sectoral planning agencies is necessary to the interpretation of the data presented below. Perhaps the most salient aspect of the interface between transmigration and other planning institutions is that as a planning program, transmigration is neither subordinated to nor directly integrated with provincial and local level planning. Rather, the Ministry of Transmigration organizes what can be called a parallel planning process in each province. During its years of responsibility for each site, it also establishes a separate line of political accountability, with the site head (*kepala UPT*) acting as an unofficial *camat* (sub-district head) in administering social, political and economic relations on the sites, and serving as a separate but equal partner with the *kecamatan* government in resolving problems between site residents and local residents.

At a higher level, provincial and *kabupaten* planners are called upon to assist in 'coordinating' various centrally budgeted and administered line agency operations, such as road construction, which physically need to be linked with transmigration site development. Since local budgets are

considerably smaller than those channeled through the line agencies (*kanwil* and *kandep*) and are themselves made up not of local revenues but annual allocations from Jakarta, coordination in practice primarily consists of holding meetings and promoting cooperation rather than exercising authority to allocate resources or to resolve differences between functional planning agencies. A recent review of provincial planning by the World Bank (1984) found that because sectoral offices prepare their own independent budgets, which do not correspond to provincial (BAPPEDA) plans and are not consolidated into a single development budget, coordination is difficult to realize in practice.¹

With these comments as introduction, Table 20 begins the assessment of the potential contribution of Transmigration resources to the financing of development in receiving provinces by showing the increasing magnitude of the budget given to the transmigration program in recent years. In comparing allocations during Repelita III (1979/80-1983/84) with those of 1985/86 under Repelita IV (see Appendix A12), the final two columns of the table show an across-the-board increase in transmigration's share of the total development budget (DIP) spent at the provincial level. Only Southeast Sulawesi shows a small decline in transmigration's budget share, and in eight of the 17 provinces shown in the table, the share is from one-third to almost one-half of the total development budget. Only in four provinces, all of which have very low numbers of transmigrants, do the proportions fall below 10 percent.

Such figures appear to represent a substantial spatial redistribution of development financing away from the Java and, particularly, Jakarta. Furthermore, as the middle columns in Table 21 indicate, among the receiving provinces a shift away from Sumatra toward Kalimantan and Eastern Indonesia is clearly indicated by the change in shares which the respective provinces have received in the past and in 1985/86. Under Repelita III Sumatra received 42 percent of the portion of the transmigration budget allocated to the receiving provinces. This declined to 37 percent in the 1985/86 budget.

A closer look at the actual implementation of the budgets, however, reflects the difficulties in effecting the redistribution implied by them. Table 21 shows allocated and actual expenditures for 1 April 1984 to 1 April 1985. It reveals that only 20 percent of the total budget was actually spent, dropping the per capita allocations to the provinces from around Rp. 2500 to Rp. 500 on the average. More importantly from a spatial perspective, the figures show that while Jakarta and Java were allocated 32 percent of the total budget, they accounted for 50 percent of actual expenditures. This was dominated by Jakarta which, perhaps somewhat ironically, captured 46 percent of the total budget spent on transmigration. In addition, although at low levels of realization, rates of expenditure in Sumatra were on the average higher than elsewhere, resulting not in a redistribution of expenditures away from Sumatra but, Jakarta excluded, a higher proportion of the total going to Sumatra than had been planned.

¹ The study concluded that Inpres allocations also impede local flexibility in planning and integration of budgets into a single regional development approach at the local level. The proportion of central government grant in total local (province, kabupaten, kecamatan and village) government income increased from 62 percent in 1976/77 to 68 percent in 1980/81. During the same period regional expenditures as a percent of total government expenditures fell from 26 percent to 20 percent. Locally raised revenues account for approximately 3 percent of total central and local revenues.

TABLE 20
CHANGES IN TRANSMIGRATION DEVELOPMENT BUDGETS AMONG RECEIVING PROVINCES
1979-82 & 1985/86

PROVINCE	TRANSMIGRATION DEVELOPMENT BUDGET		DISTRIBUTION AMONG RECEIVING PROVINCES*		TRANSMIGRATION AS % TOTAL DEV. BUDGET	
	1979-82 ¹	1985/86 ¹¹	1979-82	1985/86	1979-82 ¹	1985/86
	ACEH	15,193	16,017	3.3	2.6	11.0
N. SUMATRA	6,659	17,460	1.4	2.8	3.0	8.5
W. SUMATRA	5,147	9,016	1.1	1.5	3.0	6.6
RIAU	62,956	49,397	13.6	8.1	24.0	35.8
JAMBI	28,367	30,275	6.1	4.9	29.0	37.5
S. SUMATRA	114,486	60,966	24.7	9.9	44.0	29.8
BENGKULU	16,505	14,472	3.6	2.4	20.0	24.1
LAMPUNG	10,316	30,068	2.2	4.9	9.0	25.7
W. KALIMANTAN	29,098	61,781	6.3	10.1	26.0	44.4
C. KALIMANTAN	22,765	49,084	4.9	8.0	33.0	48.0
S. KALIMANTAN	39,030	26,695	8.4	4.4	27.0	24.1
E. KALIMANTAN	26,297	60,046	5.7	9.8	29.0	42.9
N. SULAWESI	7,265	7,519	1.6	1.2	8.0	8.9
C. SULAWESI	20,622	27,111	4.4	4.4	25.0	33.9
S. SULAWESI	6,678	15,582	1.4	2.5	4.0	9.7
S.E. SULAWESI	24,755	26,280	5.3	4.3	37.0	35.7
MALUKU	11,634	23,804	2.5	3.9	17.0	25.4
IRIAN JAYA	16,668	87,699	3.6	14.3	27.0	45.7
TOTAL	464,441	613,272	100.0	100.0	20.0	16.5

*Figures do not include amounts allocated to Jakarta or sending provinces.

¹ source: UNDP/OPE, Transmigration Programme Second Phase Evaluation (Jakarta, 1982), Table 3.9. Figures are totals for three budget years and do not apparently include carry-overs (siap) from previous years.

¹¹ source: Min. Finance, Laporan 1985/86 dari S.D.P.D Bandung. Figures include siap from 1982/83 to 1984/85.

TABLE 21

DEVELOPMENT BUDGET (DIP) FOR TRANSMIGRATION BY PROVINCE 1984/85*

PROVINCE	ALLOCATED BUDGET			ACTUAL EXPENDITURES			
	AMOUNT (Rp. mn.)	SHARE OF TOTAL (%)	PER CAPITA' (Rp.)	AMOUNT REALIZED (Rp. mn.)	SHARE OF TOTAL (%)	PER CAPITA' (Rp.)	
DKI JAKARTA	107532.5	26.3	14177.0	38676.2	36.0	46.3	5099.0
W. JAVA	5560.9	1.4	183.0	1170.3	21.0	1.4	38.5
C. JAVA	7811.7	1.9	289.3	832.3	10.7	1.0	30.8
YOGYAKARTA	936.8	0.2	327.0	280.8	30.0	0.3	98.0
E. JAVA	9216.8	2.3	298.6	831.5	9.0	1.0	26.9
JAVA	131058.7	32.1	1313.3	41791.1	31.9	50.0	415.6
ACEH	7674.8	1.9	2627.9	1222.0	15.9	1.5	418.4
N. SUMATRA	4229.6	1.0	458.2	429.5	10.2	0.5	46.5
W. SUMATRA	3225.5	0.8	870.5	454.0	14.1	0.5	122.5
RIAU	22588.9	5.5	9247.1	5110.3	22.6	6.1	2092.0
JAMBI	16216.4	4.0	9594.4	1768.2	10.9	2.1	1046.1
S. SUMATRA	31123.2	7.6	5917.9	4258.4	13.7	5.1	809.7
BENGKULU	6705.4	1.6	7376.7	1335.6	19.9	1.6	1469.3
LAMPUNG	11584.0	2.8	2008.0	4046.3	34.9	4.8	701.4
SUMATRA	103347.8	25.2	3135.6	18624.3	18.0	22.2	565.1
W. KALIMANTAN	25526.1	6.2	9403.6	2428.7	9.5	2.9	894.7
C. KALIMANTAN	22252.3	5.4	20439.3	5692.2	25.6	6.8	5228.4
S. KALIMANTAN	11195.4	2.7	4994.4	1285.5	11.5	1.5	573.5
E. KALIMANTAN	26422.3	6.5	17396.8	2155.6	8.2	2.6	1419.3
KALIMANTAN	85396.1	20.8	10970.9	11562.0	13.5	13.8	1485.4
N. SULAWESI	3747.7	0.9	1622.8	819.3	21.9	1.0	354.8
C. SULAWESI	12168.6	3.0	8137.4	3146.8	25.9	3.8	2104.3
S. SULAWESI	5036.3	1.2	777.8	384.8	7.6	0.5	59.4
S.E. SULAWESI	10696.5	2.6	10079.6	2314.7	21.6	2.8	2181.2
SULAWESI	31649.1	7.7	2740.6	6665.6	21.1	8.1	577.2
MALUKU	8304.8	2.0	5271.2	635.8	7.7	0.8	403.6
BALI	1598.7	0.4	607.2	130.2	8.1	0.2	49.5
NTB	2306.2	0.6	773.7	302.6	13.1	0.4	101.5
NTT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IRIAN JAYA	43194.0	10.5	33228.7	3648.2	8.4	4.4	2806.5
E. TIMOR	2727.4	0.7	4560.1	95.2	3.5	0.1	159.2
TOTAL	409582.8	100.0	2534.9	83455.0	20.4	100.0	516.5

* 1 April 1984 to 31 March 1985.

source: Ministry of Finance, Laporan 1985/1986 Dari S.D.P.D. Bandung.

Because the unspent balances of budgets are currently being carried over to subsequent years, the 'embarrassment of riches' of Transmigration is also increasing. This leads to the issue of the absence of effective mechanisms for local governments to finance programs and projects to deal with the direct and indirect effects of transmigration. One of the direct effects comes when, by law, the responsibility of Transmigration over each site must end after the two-year site opening plus five-year guardianship, and all infrastructure and services are turned over to the local government to finance and administer. Under the centrally-controlled budgetary process, there is concern that this impact may not be registered in terms of appropriate increases in local routine and development budgets or through the Inpres Program.

Especially acute are the problems generated at the kabupaten level. Not only is the impact of transmigration largely concentrated in the kabupaten, rather than the province as a whole, but to a large extent the types of infrastructure and amenities brought to the province will be turned over to the kabupaten for continuance and maintenance. Again, to draw upon the example of roads, it is obvious that most roads created on transmigration sites will not qualify as national, provincial or municipal roads but will instead be passed on to the kabupaten for maintenance.¹ Kabupaten are themselves totally dependent upon centrally allocated Inpres funds for road building and maintenance. Since these funds are calculated on a per capita basis, and since transmigrants are not counted in the kabupaten population during the initial seven-year period of Transmigration support, the initial transfer to the kabupaten represents in most cases a substantial increase in demands on scarce financial resources.

Table 22 gives an indication of the current capacity of local governments to maintain roads and the type of burden which may be passed onto them by transmigration projects. First, it shows that as of 1984 an average of 38 percent of all roads in receiving provinces were classified as being either damaged (*rusak*) or heavily damaged (*rusak berat*).² More important to the discussion here, the proportion of kabupaten roads in these categories was significantly higher, with an average of 48 percent and some provinces having over 60 percent of their roads in conditions of severe deterioration.

Table 22 also presents data on the ratio of maintenance and rehabilitation to construction of roads. At the average ratio of 24 percent of roads being maintained, the data suggest that roads receive maintenance approximately once in four years. Most dirt and gravel roads built on transmigration sites experience significant deterioration within one or two years of construction. This

¹ The issue of road maintenance also relates to the way in which the absence of an effective means for local resolution of problems of coordination between central planning bureaus inhibits efforts to improve physical linkages between sites and other regional settlements. At least some of the roads constructed to link transmigration sites with the larger regional settlement system are of such a scale that after the initial construction Public Works is requested to take over responsibility for them. Because Public Works can only take responsibility over roads which are designated as provincial or national level roads, the transfer involves a process of at least one year to obtain a required official number for the road which allows the local line agencies to spend budgeted resources for it. The takeover may be refused, however, and the roads may continue to deteriorate if they are found to be in such a state of deterioration that Public Works, by regulation restricted to only pioneer road building into newly opening area or to road maintenance but not rehabilitation, is not allowed to accept the road in its existing condition and Transmigration continues to postpone rehabilitation.

² Four classifications are used: good, moderate, damaged and heavily damaged.

TABLE 22 ROAD CONSTRUCTION (C), MAINTENANCE (M) & REHABILITATION (R), TRANSMIGRANT RECEIVING PROVINCES

PROVINCE	LOCAL ROADS DAMAGED 1984 ¹			TRANSMIGRATION ROADS (Km.) [*]			ROAD UPKEEP ^{**}	
	KABUPATEN (%)	OTHER ¹¹ (%)	ALL ROADS (%)	(C) 1981-84	(M) 1984	(R) 1984	(M) AS % (C)	(M & R) AS % (C)
ACEH	56.3	15.2	44.3	579	171	116	29.5	49.6
N. SUMATRA	37.7	26.9	34.0	374	69	82	18.4	40.4
W. SUMATRA	61.3	15.0	46.4	146	45	22	30.8	45.9
RIAU	62.5	14.0	46.9	840	102	303	12.1	48.2
JAMBI	62.1	13.1	40.2	1077	318	92	29.5	38.1
S. SUMATRA	50.6	7.9	33.5	1779	305	184	17.1	27.5
BENGKULU	40.4	8.6	31.1	505	112	91	22.2	40.2
LAMPUNG	46.9	16.2	33.5	2202	670	331	30.4	45.5
W.KALIMANTAN	32.7	28.5	30.9	1269	212	432	16.7	50.7
C. KALIMANTAN	39.9	9.3	34.8	511	157	134	30.7	56.9
S. KALIMANTAN	50.3	5.3	37.4	166	26	54	15.7	48.2
E. KALIMANTAN	22.0	38.3	34.5	214	45	47	21.0	43.0
N. SULAWESI	59.5	18.1	47.4	40	20	0	50.0	50.0
C. SULAWESI	55.0	32.4	45.0	1440	243	0	16.9	16.9
S. SULAWESI	43.1	5.3	35.9	131	68	5	51.9	55.7
S.E. SULAWESI	40.5	18.3	34.8	459	149	56	32.5	44.7
MALUKU	41.6	41.8	41.7	595	146	106	24.5	42.4
NTB	41.8	5.2	34.0	79	3	33	3.8	45.6
IRIAN JAYA	45.0	16.8	41.5	825	287	76	34.8	44.0
E. TIMOR	-	-	33.7	49	13	0	26.5	26.5
TOTAL	47.7	19.5	38.4	13280	3161	2164	23.8	40.1

source: Dept. Transmigration, 1985.

^{*} includes main linkage (penghubung), inter-village access (poros) and village (desa) roads.

Dept. Transmigration estimates the following ratios in site planning: (a) 15 km. main road per SKP; (b) 17.5 m. access road per household; (c) 35 m. village road per household.

^{**} Because Min. Transmigration responsibility for sites covers approx. 7 years (2 years construction + 5 years support), the actual length of road under its responsibility is greater than the 1981-84 construction figures indicate.

¹ includes damaged (rusak) and heavily damaged (rusak berat) roads, but does not include moderately damaged (sedang) roads. ¹¹ includes national, provincial and kotamadya roads. source: BPS, Statistik Indonesia 1984, Table 8.1.5b (road condition as of 31 December, 1984).

may lie behind the data showing rehabilitation as an activity which, in some provinces, is almost on a par with maintenance. However, because the stock of roads constructed by Transmigration is larger than that completed between the 1981-84 period shown in the table, the estimated ratios overstate the proportions of total roads being maintained and rehabilitated. As such, they suggest that in any one year less than half of the total stock of roads is receiving maintenance or rehabilitation. Observations from field visits in Lampung and South Sumatra of the high percentages of deteriorated roads on transmigration sites indicate that this level of maintenance is not adequate, and that the tasks of road maintenance and rehabilitation which will be inherited by kabupaten governments will, if Repelita IV transmigration targets are achieved, may well overwhelm the local financial and institutional capacity to deal with them.¹

A related aspect is the impact which large-scale transmigrant activities have -- at least in the short-run -- on urban development in their vicinity. As previously noted, towns, even small ones, in transmigration regions often experience a boom in activity either as a spin-off from hyperactivity in construction, the relocation of civil servants and their consumption expenditures, or the search for 'informal sector' work by the transmigrants themselves. Many of these towns are now growing at rates which, if they continue, will double their populations every 10 years.

Indonesian cities in general are unable to keep pace with accelerated growth; the capacity is notably low in both the large coastal cities and the small frontier towns in the outer islands. The statistics with regard to the backlog of unmet services are striking.² A 1984 study on local transportation discovered that, due in part to the widespread and largely uncontrolled practice of truck overloading far above regulation axle weight limits and in part to the 15 percent per year growth rate in motor vehicle ownership since 1973, as much as 50 percent of the main urban road network in the (64) cities investigated was on the verge of structural collapse. In the outer islands only about 30 percent of the larger urban centers have access to clean water supplies; and less than 30 percent have access to sanitation facilities, with only 25 percent having any kind of formal garbage collection service.

For smaller towns which have no formal urban status and depend exclusively on central allocations to kabupaten and kecamatan governments, which represent the smallest share of provincial expenditures, rapid increases in road traffic and accelerated growth in their residential populations cannot be accommodated under current planning arrangements. Furthermore, since these types of indirect impacts of transmigration activities are not readily accounted for in the existing budgeting and local planning framework, they remain for the most part beyond the capacity of local governments to successfully address.

¹ In this connection it may be noted that although provincial Inpres budgets increased between 1984/85 and 1985/86, they remained constant in nominal terms, and therefore decreased in real terms, at the kabupaten level (World Bank, 1985, p.209).

² See NUDS/PADCO, "Urban Services Program Accomplishments and Trends" (Jakarta: UNCHS/GOI, 1984). The study concludes that the lack of coordination between major agencies is a major cause of road deterioration.

4.2 transmigration and traditional social organization

Another type of regional impact which needs mention, but which is beyond the scope of this report to adequately address, is the impact of transmigration on traditional social organization and management of the local economy, especially the environment. In a study on tidal swampland, for example, Collier (1979) maintains that local *adat* (customs) of the Buginese, who have been the main settlers of tidal swamplands, exercise effective communal control over the exploitation of natural resources, and may be better suited to the task of conserving and renewing natural resources than the institutional relationships which accompany transmigration. In citing a study by Hanson (1980), he goes on to argue that the provisioning of support solely for transmigrants without similar levels for local populations creates situations in which, once local custom is undermined, the resource base for the local community may also diminish through, for example, unregulated forest cutting.¹ The studies from Jambi and South Kalimantan concerning the destruction of forests around transmigration sites, resulting in migration as a means of continuing forest exploitation, suggest that this is an issue which needs constant monitoring.

Within this same issue is the equally complex question of privatization of land ownership for transmigrants versus local *adat* systems of communal organization. Proponents of privatization of land ownership stress the need for security of ownership over the means of production and the attraction which the prospects of land ownership would provide to would-be spontaneous migrants who, in the longer term, are expected to become a major source of transmigration to the outer islands. From an opposing point of view, others argue that as in other areas of the world which have experienced large-scale in-migration of sedentary agriculturalists into areas originally inhabited by small-scale societies with simple economies, the sheer numbers of transmigrants in many outlying areas will in the longer-term inexorably lead to the dissolution of these traditional systems.

Without entering the debate at the levels discussed above, and assuming for the moment that the overriding interest is not to preserve traditional economic relationships for the sake of preservation per se, but is to promote increases in economic and material welfare for the regional as well as the transmigrant population, whether the results of transmigration will be the successful 'modernization' of low technology and low productivity production economies or the deterioration of regional economic life will, especially as the program moves toward Kalimantan and Irian Jaya, depend very much on the type of economic activities which accompany the transmigrants. To the extent that transmigrants themselves take up such activities as unregulated forest cutting as a response to the absence of alternative income-earning opportunities, and in lieu of other economic growth injections into these regions, the prospects for some areas will not be good. In other areas where transmigration can more effectively link up with activities which generate alternative sources of economic growth which can avoid environmental deterioration and provide new employment opportunities for non-transmigrants as well, the outcome may be much more welcomed.

¹ Hanson (1980, pp. 25-26) argues that "what may be most critical is the degree to which the local leaders' reasonably well-developed concern for multiple uses and long-term strategies is lost as single-purpose, poorly coordinated government agencies exert control. Typically the local authorities abdicate (or fear to exert) their established regulatory powers once development begins. Decisions on the forest, land and water resources formerly made by one leader and a local council now become lost in a morass of government agencies with varying levels of interest and capacity to implement plans."

5. Regional Development Issues

5.1 Summary of Findings

An assessment of the impact of transmigration on regional development in Indonesia's outer islands indicates that in terms of labor power, land opening and infrastructure, it has been substantial in recent years. Especially since the beginning of Repelita III the number of people moved, the area of farmland opened, and the number of roads and related infrastructure constructed has been impressive. Transmigrants settled during the Repelita III period were found in some kabupaten to be equal to as much as 40 percent of the 1980 population. In several provinces transmigrant increases were estimated to be equal to those from natural population growth and spontaneous migration during the 1980-85 period. Farmland opened for transmigrants was found to be equal to 10 percent or more of the estimated total area of land utilized in five provinces. Roads construction was estimated to have almost doubled the kilometers of road in one province and to have increased the stock of roads by more than 20 percent in a total of eight provinces.

A major question with regard to the additions of labor, land and capital is whether or not they have generated economic growth within the receiving regions. On this question, the evidence has been pieced together from a number of surveys and case studies and needs to be treated with caution when making generalizations about the transmigration program as a whole. What the evidence does suggest is that in complex processes of development, the generation of economic growth is not an automatic outcome of a large-scale transfers and investments. At least three problems have been identified in relation to the translation of transmigration activities into positive economic growth impacts in receiving provinces.

The first problem concerns the actual utilization and quality of the investments and infrastructural improvements being made under the transmigration program. In at least some areas the gap between the potential and realized contributions is large. Farmland actually being utilized is estimated to be 60 percent of the land made available. Whether this underutilization is due to late arrivals of transmigrants, the unwillingness of transmigrants to work fields separated by large time distances from their homes, the withdrawal from agricultural production as non-farm employment is found, or other factors is not clear. Of course, in view of the expectation that at least one-third of the total number of transmigrant households under Repelita IV will be spontaneous migrants who receive no land from the transmigration program, such surpluses of land may be a blessing in disguise -- if institutional mechanism can be created to make this land available to them. In the short run, however, evidence suggests that settler land stocks are underutilized; concerning the longer term some evidence points to a disturbing tendency of the fertility of soil under production to decline over time. A major cause of this tendency is the perennial planting of crops coupled with the high cost of inputs and labor time required in conservation efforts on marginal soils.

Investments in roads have also been carried out in a manner which has limited the economic impact of transmigration. Interaction and economic integration within and between regions in Indonesia's outer islands is known to be spatially restricted; many coastal locations may have higher levels of interaction with Java than with other settlements in their home provinces. The potential role that transmigration takes on is therefore one of initiating pioneering efforts in pro-

moting regional integration through road and infrastructural development in and around transmigration sites. In particular, the role of roads in promoting production for the market and in raising the potential for higher incomes for transmigrant households has been emphasized in all available studies of transmigration sites. More isolated sites have been found to have low levels of marketed surpluses and to have received generally lower prices for their agricultural commodities. Yet the maintenance of roads appear to be one of the most neglected aspects of capital investments being made under the transmigration program. Field visits in Lampung and South Sumatra revealed severe deterioration of on-site roads and access roads between the sites and other provincial settlements. The effect has been to leave these sites unnecessarily restricted from frequent interaction both within themselves and with the larger regional economy. In more remote provinces and localities, such as East Kalimantan and southern Irian Jaya, some sites are cut off from the rest of the region for several months during the year.

A second area of concern is the basic farm model and the implementation of support services for it. Although the provisioning of food is basic to any frontier settlement scheme, and household production of foodcrops would probably not be abandoned even if no direct support were provided for it, the single-minded emphasis on food production in areas where soils are often not well suited for it has left deficits in household incomes which have not been filled by other aspects of the transmigration program. Problems in achieving timely delivery of support packages, which depends upon coordination between the Ministry of Transmigration and the Ministry of Agriculture, have contributed in at least some cases to the low incomes from agriculture. Elsewhere, the absence of transportation facilities has been one reason why extension agents cannot meet with settlers and carry out their duties. While the problems related to support services may be amenable to improvements in the implementation process, the more difficult issue is the extent to which a more diversified foodcrop and non-food cashcrop model can be devised which can balance the imperative for basic food production with opportunities to achieve higher incomes than foodcrops alone will allow.

The relatively poorly developed road networks and transportation systems, problems in achieving high yields on settlement farmland, and the implementation of the farm model are all factors behind the conclusions drawn from income surveys surveys and site studies that at present the positive direct and indirect impact of the economic activities of transmigrants remains small. Transmigrants tend mostly to produce food for their own consumption and to engage in petty trade and unskilled wage labor as the main means of earning incomes. Expenditures tend to overwhelmingly be absorbed by basic food purchases which, although they may spur some increases in local food marketing, cannot in most cases be assumed to have pervasive impact on agricultural production in the region. Whether or not the absence of strong positive impacts is also associated with a process through with more negative impacts on local ecologies and social systems increase cumulatively over time is one of the outstanding regional development issues in need of further study.

The third category of factors which question the impact of transmigration covers the four-way relationship between Transmigration as a planning agency, the local governments, traditional social customs related to resource use and planning, and the transmigrants themselves within the receiving regions. The issues involved cover a wide range of topics, from the organization of planning and administration to the accommodation of different forms of social control over local territorial development. Concerning the relationship between transmigration

and local government, the case has been made that the setting up of a parallel planning program which, in practice though not in principle, stands outside the provincial and local planning framework, has the effect of limiting the potential of incorporating transmigration into the broader directions of regional economic expansion. In the absence of a common regional development framework, opportunities to link, for example, increases in manpower through transmigration with plans for establishing plywood manufacturing or urban-based activities may be overlooked.

Such comments do not apply only to transmigration, but are also more generally applicable to the dominant sectoral approach toward provincial development from the center. Yet the increasing presence of transmigration in terms of both numbers of transmigrants and size of budgeted resources under its command suggest that, rather than organizationally containing transmigration within a narrow program development framework, more positive regional impacts could be achieved from its inclusion in strategic planning and development efforts at both the local and national level to establish a long-term basis for stable economic growth in the sparsely-settled areas of the archipelago. Local financial resources and planning authority are limited, however, and patterns of central and local budgeting suggest that the independent financial capacity of locally governments to engage in long-term, multisectoral planning has probably diminished rather than increased in recent years.

The relationship between transmigration and local cultural and socioeconomic organization is one of the most sensitive of four touched upon. Concern has been expressed about possible unintended impacts of transmigration on indigenous land-use patterns and ecological balances. Available evidence is partial and inconclusive; yet the issue is likely to be raised again as transmigration moves away from Sumatra and to Kalimantan and Irian Jaya.

The relationship within the planning process between the government and transmigrants themselves as a community has received perhaps the least amount of discussion in reviews and case studies of the four relationships under consideration here. The reasons for the absence of discussion on ways to increase participation in planning are not clear. The lack of symmetry between planners' designs and transmigrants' decisions about the use of their time and resources is nonetheless striking. While, for example, the Government has viewed transmigration as a two-stage development process of first establishing food self-sufficiency and then moving on to cashcrop production, research from the past as well as recent years has consistently shown that transmigrants do not themselves make such a distinction and are eager to diversify household production into a variety of agricultural and non-agricultural activities.¹ Given the settings from which the transmigrants are coming in Java and Bali, where recent reports indicate that at least 60 percent of rural households are engaged in some form of non-agricultural employment and as much as 50 percent have at least one member who temporarily migrates away from home to gain employment, the differences between the farm model and the economic strategies of households is to be expected, especially since many of the young landless recruits may have had little if any experience in farm management.² This lack of symmetry has obvious implications concerning the

¹ (Wiradi, et al., 1984).

² Studies from the late 1960s were already indicating that transmigrants commonly sought non-agricultural employment as part of their household economic survival strategies (Hameed, 1976; Soeratman and Guinness, 1977).

regional impact of transmigration; for as long as the economic decisionmaking of transmigrants is not included in the planning process, its impacts on the region are not anticipated. More positively, there undoubtedly exists untapped opportunities for mutual learning between planner and transmigrant which could enhance the performance of farm systems and help to identify other agricultural and non-agricultural activities worthy of government support.

5.2 transmigration in the national spatial development context

The conclusion summarized above do not deny the observation that large movements of transmigrants into new areas, and the accompanying land clearing, road construction and government activity, do in fact create an effect of hyperactivity in the immediate vicinity of the sites. Everywhere small towns near transmigration sites appear to be growing at very high rates; and much of the expenditure of public resources in the outer islands can be justified only because of the exceptionally rapid increases in population brought about through transmigration.

However, it is an open question whether transmigration activities alone will sustain such economic activity. The development of Lampung, which through a long history of transmigration now has many more Javanese-origin inhabitants than indigenous ones, and which has had the highest combined levels of transmigration and spontaneous migration since at least 1970, may provide food for thought on this point. Not only is per capita income in Lampung (1981) among the lowest in Indonesia, it is also slightly below the combined level of Central and East Java, the major transmigrant sending provinces.¹ More importantly, the growth rate in per capita income in Lampung in real terms (constant 1975 prices) from 1977 to 1981 was 2.9 percent per year, well below the 7.7 percent growth rates for Central and East Java and for the nation as a whole. Finally, Lampung has now reached such an effective density that in some areas problems related to high effective man/land ratios similar to those of Java have appeared. Lampung has, in fact, become a transmigrant sending area, providing transmigrants for resettlement elsewhere.

The Lampung experience may be dismissed by some as being a special case; yet current macroeconomic and employment projections in some other transmigrant receiving provinces are not encouraging. Projections by the Universitas Sriwijaya for the BAPPEDA in South Sumatra, the province which has received the largest total number of transmigrants since Repelita I, have, for example, estimated that based on past labor absorption patterns and expected labor force and sectoral growth rates, unemployment rates will increase from a level of 1.3 percent in 1980 to 9.2 percent in 1990.² The major reason for this expectation is that South Sumatra's resource-based industrial structure, like many other outer island economies, has been subject to a significant downturn resulting from a prolonged fall in the world demand for its exports.

Table 23 indicates that the projections similar to those for South Sumatra may apply to several other outer island provinces. In giving estimates of the regional impact of changes in

¹ The 1981 per capita income of Lampung was Rp. 197,069; while the average for Central and East Java was Rp. 209,976 (BPS, 1983).

² Universitas Sriwijaya, BAPPEDA Sumatra Selatan, and Biro Pusat Statistik (1984).

TABLE 23 IMPACT OF DECLINING NON-OIL EXPORTS ON REGIONAL PRODUCT
SELECTED PROVINCES

PROVINCE	% EXPORTS IN GRDP ¹ 1979	MAIN EXPORTS	% CHANGE EXPORT RECEIPTS 1980-82	INDEX OF IMPACT ²
W.KALIMANTAN	14.7	Timber,Rubber	-35	14.7
C. KALIMANTAN	23.3	Timber	-44	23.3
S. KALIMANTAN	22.6	Timber,Rubber	-48	22.6
E. KALIMANTAN	42.3	Timber	-73	42.3
N. SUMATRA	13.6	Rubber,Palm Oil	-47	13.6
JAMBI	24.4	Timber,Rubber	-53	24.4
S. SUMATRA	12.3	Coffee,Rubber	-25	12.3
LAMPUNG	14.6	Coffee,Rubber	-56	14.6
MALUKU	20.7	Timber	-74	20.7

C. JAVA	0.7	Rubber	-15	0.7
E. JAVA	10.1	Coffee	-21	10.1

¹Gross regional domestic product;

²Change in export receipts multiplied by share in GRDP 1979. To extent that part of income accrues to other provinces, the impact is overstated by this index

Source: World Bank staff estimates based BPS data.

demand for Indonesia's major non-oil exports, the table shows a sharp decline in regional product following a substantial drop in receipts of these exports in the early 1980s. The impact on selected provinces, many of which are targets for high rates of transmigration during Repelita IV, is shown to be much greater than the impact on Java. This fall in the expected contribution of major natural resource-based and cashcrop activities to economic growth outer island is an element which had not existed in the 1970s, but is now one which has become a central to thinking about the capacity for integrating transmigrants into the economies of the receiving provinces.

In addition to an expected slowdown in the major exporting provinces, it must also be noted that for several other transmigrant receiving provinces, such as Bengkulu, Lampung, Central Kalimantan, Central Sulawesi, and Maluku, even during the high growth period of the 1970s the leading sector of economic growth was neither manufacturing nor agriculture, but was government spending.¹ For these provinces, the issue of providing productive employment for the indigenous population is a major one in an era of a lower government revenues and spending.

Such figures put transmigration into a new light. They indicate that just as the Government is attempting to accelerate transmigration, sources of economic growth and labor absorption exogenous to the program in the outer islands may be entering into a very sluggish period. If the low transmigrant agricultural performances of the past are continued, and if transmigrants begin to join the ranks of the regional labor force searching for non-farm employment opportunities, the large increases in transmigration planned under Repelita IV, which at 750,000 households, represents a 50 percent increase over the Repelita III level, suggest that pressures on local natural and economic resources may well be intensified.²

At the same time, the large-scale import-substitution industries dominating the industrial structure of Java, which accounts for more than 80 percent of the value added and employment in medium and large-scale manufacturing in Indonesia, have also shown sluggish growth, with many showing high levels of underutilized capacity. This, coupled with the very rapid shedding of agriculture from Javanese agriculture as a consequence of new technologies and changing labor relations, has underscored the dilemma upon which transmigration stands. On one hand, at continuing high rates of growth of the Javanese labor force and with an expected increase of approximately two million workers per year during the 1980s and most of the 1990s, there is an expected shortfall in employment generation on Java in the order of two-to-three million jobs by 1990, resulting in an implied open unemployment rate of 7 percent.³ While this provides at least a *prima facie* case for accelerating the transmigration of people to frontier areas where at least a subsistence living can be achieved, such movements must also be judged against the employment problems which may be emerging in the receiving provinces.

¹ Douglass (1984). Leading sector defined as the fastest growing sector in the economy which accounts for at least 5 percent of the GRDP.

² Given the slow-down in the implementation of the Repelita IV program to date, independent observers have revised transmigration targets substantially downward; the Government and the Ministry of Transmigration continue to base policies on the original targets of 750,000 households.

³ Repelita IV and World Bank estimates (see also Douglass, 1984).

These observations raise the much overlooked point that a fundamental cause of under-employment in Java (and elsewhere) in the 1980s is not necessarily 'too many people' per se, but is also linked to the effects of major sectoral development policies pursued during the 1970s: low labor absorption in industry under import-substitution policies to develop the manufacturing sector; rapid labor shedding of agriculture resulting from technological and social changes in relations of production following from the 'green revolution' in rice production.¹ In fact, all provinces of Java showed relatively high rates of per capita growth in production throughout the 1970s.

Similarly, the wide disparities in densities between the inner and outer islands do not necessarily indicate an equally wide level of disparity in economic potential. Figure 13 presents an exercise in comparing nominal population densities (population divided by total land area), with densities calculated by weighting the total area used with an index based on estimates of land productivity. What it suggests is that while nominal densities show extreme differences between the inner and outer islands, the extreme differences not only disappear, but are in some cases reversed when calculated in terms of the density relative to the economic productivity of land under use.

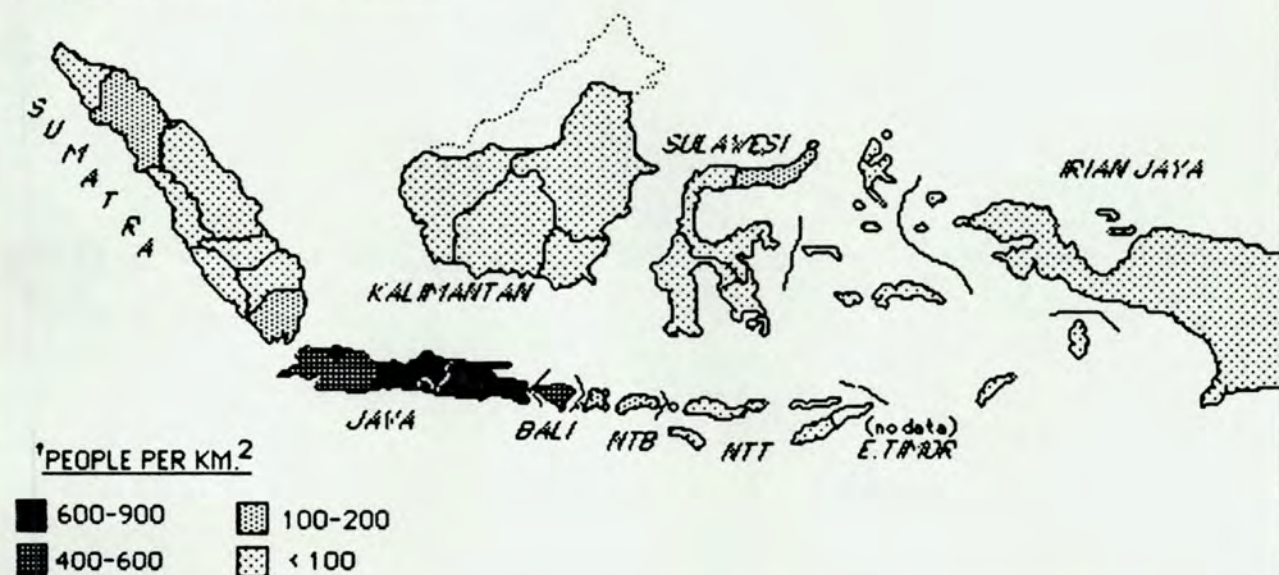
While these calculations should be taken as only rough comparisons of what might be called the 'economic' density of rural areas, they do indicate that under current technologies and crop regimes, Java may not be significantly more 'densely' settled than many outer island provinces, and may even be less than some nominally less densely populated regions. They should not be taken to mean that there are no opportunities to expand production in the outer islands, especially under cash crops which are more suited to their soils. They simply suggest that one of the often-used arguments for transmigration concerning the imbalance in population distribution between the inner and outer islands is greatly exaggerated by simple man/land ratios.

Three major implications can be taken from the discussion above on the national spatial context for transmigration planning. First, the long-established case that moving people *per se* will not help to solve either the problems of underemployment on Java and Bali or stimulate development on the outer islands is perhaps more valid now than it was a decade ago when the inner islands were experiencing real increases in rural incomes and many provinces in the outer islands were displaying high rates of economic growth and employment increases. Secondly, given the observed dependence of transmigrants on non-farm employment and indications of slower economic growth in many receiving provinces, the achievement of subsistence incomes for transmigrants may no longer be assumed to be an automatic outcome of the provisioning of foodcrop production support alone by the transmigration program. Third, it can no longer be maintained that the pursuit of the objectives of transmigration can, therefore, be separated from other sectoral development policies, local development programs, or thinking about new institutional arrangements for local level planning.

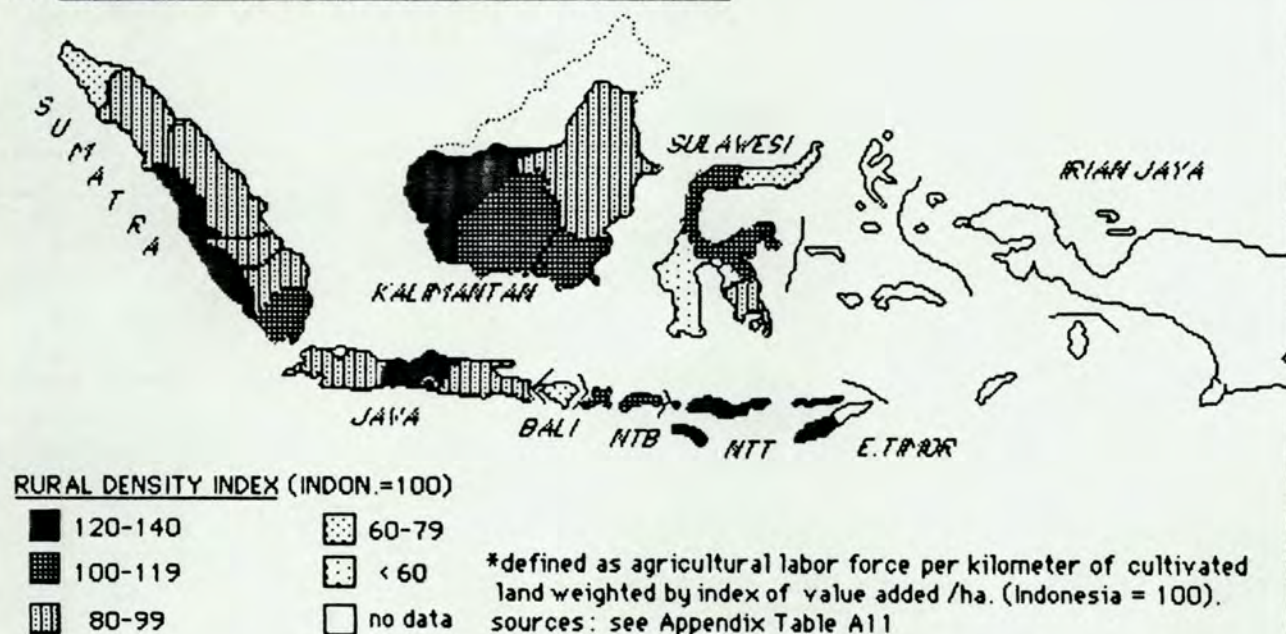
¹ See, for example, Wiradi, et al. (1984); Collier, et al. (1982); Jones, et al. (1984).

FIGURE 13 NOMINAL VERSUS 'ECONOMIC' DENSITY IN RURAL INDONESIA
1980

(A) NOMINAL POPULATION DENSITY[†]



(B) RURAL DENSITY WEIGHTED BY LAND PRODUCTIVITY*



5.3 Integrating Transmigration with Regional Development

As some of the issues have become better understood and others have become more acute, a number of proposals for alternative approaches toward the resettlement of people in Indonesia's outer islands have been discussed. Many are still in preliminary stages and are not yet detailed enough to allow for evaluation. Some are simply directed toward widening the scope of the program to cover a larger number of activities. Others, which are more concerned with the planning framework itself, have advanced proposals for an area development approach toward integrating transmigration into a long-term regional planning and development process. Both touch upon the following four key areas :

- (a) farm model: food and cash crop combinations; animal husbandry and fishing;
- (b) village-level development;
- (c) rural-urban linkages: transportation, markets, higher-order services;
- (d) sectoral development policies.

5.3a farm model

The most discussed of the many aspects of transmigration has been the farm model. As previously noted, the Ministry of Transmigration has traditionally viewed the development of transmigration sites as consisting of two relatively distinct stages: a first phase of foodcrop production followed by a more or less self-generated commercially-oriented stage of food and non-food cashcrop production. This model has become increasingly seen by both the Ministry and supporting agencies as unnecessarily limiting the potential for agricultural production and, therefore, the contribution which transmigration can make to its host economy.¹ Besides higher levels of value added which can be gained from diversifying production, a contributing factor to some dissatisfaction with the foodcrop model is that the soils of many outer island sites have been found to be more suitable for tree crops than for rice production. The findings that transmigrants themselves blend, or attempt to blend, both stages within a short time after arrival in many sites is also a revealing indicator of the willingness of transmigrants to quickly move beyond foodcrop production for household consumption.²

In addition to proposals to diversify agricultural production toward cashcrops, proposals and programs have been advanced to include animal husbandry and, with many of the sites being located

¹ A recent evaluation of the program by UNDP (1982, p.8) states that "the major single development constraint is identified as having been the imposition of food crop land development models irrespective of agro-environmental conditions, which in terms of slope, rainfall, pests and, especially, soil fertility, may sometimes have been wholly unfavorable to the cultivation of food crops on any other than a shifting cultivation basis." The World Bank (1981) review of transmigration also found that the absence of agricultural packages suited to varying agro-climatic settings, management systems, and input possibilities was one of the major limiting factors of the program.

² Another assessment of the transmigration program has concluded that an adequate economic rate of return on investments made for transmigration could only be obtained if non-food components, such as tree crops, irrigation and livestock, were also included (World Bank, 1985, p.90). In a related study, Paauw (1984) shows that opportunities exist to expand employment in agriculture through import-substituting production of foodcrops as well as export-oriented tree crops.

in coastal areas, such activities as shrimp raising and processing in some areas. Foodcrop production would of course continue in all settlements; the issue is how to balance this production with other opportunities to earn incomes from agriculture.

5.3b site and village level development

Among the benefits expected from increased income from agriculture are physical improvements in the transmigrant villages which, in turn, would generate new forms of off-farm employment. While the standard of housing is in most case above that which transmigrants had in their home provinces, they have had little role in designing and improving their communities. Under current transmigration planning, transmigrants are moved onto sites with land already cleared, the layout of the settlement -- whether nucleated or linear -- and the location of farmland decided, and houses completely built. Reviews of the transmigration program on this aspect have been questioned the need for and benefits of the uniform physical planning procedures used in site development.¹ Discussions have recently been initiated on ways in which transmigrants might be both included at an earlier stage in site development and in a more formalized and programmatic manner to improve their communities over time.

On the topic of earlier inclusion of transmigrants in community design, one issue has been whether or not transmigrants could participate at the land clearing stage, receiving income from this activity which now accrues to private contractors. The higher costs of contracted land clearing relative to clearing by transmigrants, and the extremely high rates of default on contracts, which have been identified as a major bottleneck in achieving settlement targets under Repelita IV, have been two of the reasons for this reconsideration. Another reason is the possibility of increasing transmigrant incomes in a manner which may even lower overall costs to the program in a period when government resources are increasingly limited. Although some large-scale land clearing machinery would in most cases still be required, the contemplated size of the transmigration program in many regions might justify the allocation of machinery to local areas and the setting up of maintenance and repair shops as a means of not only keeping the machines in order, but of providing new sources of non-agricultural employment in the area.² Certainly in areas where such skills cannot be assumed to exist at present, it would be to the long-term benefit for local development to build up such skills based on initial demand created through land clearing.

On the topic of long-term site development, mention has been made of the South Korean New Village Movement (*Saemaul Undong*) as a possible source of insight into how to engage communities in more self-reliant efforts toward village modernization. This Movement involved, in the initial phase, the allocation of simple construction materials, such as cement and steel rods, directly to rural communities for their collective use.³ With widespread success found in using these materials for the improvement of the community at large, the next phase was to initiate a planning process using the district level government as intermediary between project selection and

¹ World Bank, 1981.

² An alternative moving in another direction is to give contracts only to very large operations which can more efficiently manage a variety of small and large clearing operations, and would therefore have a lower propensity to default. While this may clear some of the bottlenecks in implementation, it would not have much impact on either initial employment or longer-term diversification of employment.

³ Douglass (1984). One advantage which transmigration sites may have over other rural areas in Asia, including Java, is that with no landlordism and a highly equal distribution of land, the prospects for a wide sharing of benefits from community effort may be high.

supportive funding from the center. Such an approach would be in contrast to the current form of central allocation to villages in that it would be based not upon the hiring of labor for public projects, but would instead use local collective action for community improvement, with compliance based not directly upon financial rewards to individuals as workers, but on the priority which the particular project holds within the community.

5.3c rural-urban linkages

The establishment of highly accessible linkages between transmigration sites and regional towns is quintessential to even the short-term success of the transmigration program in most areas. Such linkages offer higher potential to produce for local urban as well as rural markets, with local towns acting as common marketing centers for the region and as centers of demand for vegetables and other crops which have only small markets on the sites themselves. Rural towns can also offer a wider range of production-related services, such as input supply shops and machinery repair services than can villages. They can act as centers for area-wide planning of projects which are too large to be managed at the village or site level, and they can provide centers of convenience for the consumption of higher order goods and services, including those provided in the public sector.

Much improvement can be made in developing rural-urban linkages in transmigrant receiving regions. The need to improve roads has been widely noted in studies and proposals for action. Equally important is the need to develop reliable transportation systems within sites and between the sites, other villages, and larger urban settlements.¹ A heightening of this interaction would also call for more attention to both its anticipated impact on existing infrastructure and, more positively, to the types of hinterland-serving functions which can be developed in rural towns.

The emphasis on improving rural-urban linkages explicitly calls for an approach based not on a separation of rural from urban planning, which is the current practice, but on the integration of both rural and urban planning within a single area development framework. Conventional urban-centered regional development concepts, which emphasize trickle-down effects from one or a few provincial centers to rural hinterlands, are unlikely to be of much relevance in the more remote areas where transmigration sites are established. At the same time, the interpretation of rural development as meaning agriculture plus village development is spatially blind to the opportunities of linking these two components with the marketing and service networks associated with the development of smaller rural towns.

5.3d macroeconomic and sectoral development policies

Transmigration does not exist in isolation of national level macroeconomic and sectoral development policies.² A common source of the failure of regional planning policies throughout the world has been the implicit creation of locational incentives in macroeconomic and sectoral devel-

¹ Whether this is left to the private sector or publicly initiated is an important consideration, but field observations suggest that in remote areas, the costs of access to markets via privately run systems is beyond the financial capacity of transmigrants to use with even moderate frequency.

² Macroeconomic policies include those on interest rates, rates of currency exchange, taxation and money supply (Glassburner, 1985).

opment policies create which work against the often less powerful tools such land-use regulations and tax relief incentives used by regional planners to try to change the spatial distribution of economic activities. Without complementary incentives in sectoral development policies at the national level, the movement of people from one region to another as a means of improving the spatial balance in development may occur under overriding and countervailing tendencies within key economic sectors. Import-substitution policies to develop the industrial sector have had, for example, strong implicit incentives to locate activities in or around Jakarta, which worked against the many regulations adopted to try to decentralize the growth of manufacturing activities throughout the archipelago. Similarly, the comprehensive set of policies and programs directed toward reaching self-sufficiency in rice production, while being very successful in their own terms, arguably worked against the diversification of agricultural production in densely-settled agricultural heartlands, and has been biased against peripheral rural regions which do not grow significant amounts of rice.

The slower-growth era of the 1980s has already brought initiatives to shift major sectoral development policies in both the manufacturing and agriculture sectors. New policies are being put forth to support small and medium-scale manufacturing enterprises which can take advantage of Indonesia's labor potential and resource endowments to produce manufactured goods for exports. The curtailing of timber exports and the establishment of plywood factories in the outer islands are two aspects of these efforts. Now that the plateau of national self-sufficiency in rice production appears to have been reached, policies to diversify agriculture toward domestic as well as export-oriented production have also gained new momentum. This rethinking of sectoral development policies may offer new opportunities for bringing together combinations of activities in each regional setting which are more appropriate to local resource endowments and socio-economic conditions. But this will not happen automatically without a planning framework which can effectively make the appropriate choices, coordinate the planning process, and reconcile national policy decisions with local development needs.

5.3e institutional arrangements for area development planning

In noting that the use of transmigration to support economic growth in receiving provinces will require a complex of initiatives in agriculture and non-agricultural sectors, in rural as well as urban area, and at local as well as the national level, the question of what organizational arrangements will be used to bring these initiatives together is also raised. In response to this question, four possible directions seem to be emerging, each with a different view of how best to integrate transmigration with broader regional development efforts.

The first approach involves little institutional change. It seeks to more purposefully link up the transmigration program with other publicly run agricultural development programs. The major consideration in this regard at present is to link transmigration with the nuclear estate programs to expand smallholder cashcrop production. Current assessments by the Government of the capacity to accomplish this have, however, led to the conclusion that such efforts must be limited to transmigrants already settled, and cannot be used for the new sites planned under Repelita IV.

A second approach, which is already being attempted through substantial reorganization of lines of command under Repelita IV, is a straightforward initiative for the Ministry of Agriculture to

take financial responsibility over an increasing number of functions.¹ Previous discussion has indicated that the current pattern of planning, which is dominated by a top-down sectoral approach toward local development, has been credited with leading to problems of coordination and in certain instances to impasses in the implementation process. Some of these problems have been particularly acute in the case of transmigration which, in moving people to newly opened areas lacking in many basic facilities and services, requires a high degree of coordination and accuracy in the timing of activities if the economic survival of settlers is to be achieved. One obvious solution to these problems is to reorganize the planning process to place a greater area of control under a single ministry.

The most recent aspect of this reorganization is a new procedure for Transmigration to use its budgets to subcontract work to other ministries. The effect would be for Transmigration to augment its financial capacity for managing a number of related activities while, at the same time, allowing the expertise to remain functionally separated. Although this would stop short of turning Transmigration into the type of regional development authority which has been established under the frontier opening and resettlement program operated by Felde in neighboring Malaysia, one probable consequence would be to accentuate the separation of transmigration planning from provincial and local planning as Transmigration's parallel planning capacities are expanded.

A third approach has several variations. The most comprehensive, which has not been worked out in detail, would apparently involve the giving of contracts to private entrepreneurs to develop frontier areas for settlement and agricultural development. The responsibilities of the corporations would include the provisioning of basic infrastructure, particularly roads, and possibly new-town development. The 'Brazilian model' of frontier settlement has been referred to as an illustrative case. If adopted, this model would represent a market-oriented land development approach, with land developers selling homesteads to (trans)migrants as the means of recovering their expenses and making the activity into a profitable enterprise.²

A less ambitious variation of the approach toward encouraging large-scale participation of the private sector is one which seeks to link transmigration with major industrial projects. An often-cited example is a proposal to build a paper and pulp plant in East Kalimantan, which would not be economically feasible unless a program such as transmigration were to bring to the area a sufficiently large labor force and a certain level of road and public infrastructure development. Although of potential mutual benefit to the developer and the transmigrants, similar 'growth pole' approaches have been widely reviewed throughout the developing world, and have been found to often deliver less than they appear to promise. Generally highly capital-intensive, with low

¹ Under Repelita III, a Junior Minister sat above all the ministries responsible for transmigration-related programs, with the ministers themselves being equally represented in the decisionmaking process. Under Repelita IV, Transmigration bypasses the ministerial level and works directly through the local kanwil, kandep and pimpre to coordinate inter-agency activities.

² One example of this type of development was the creation of the *Companhia de Terras Norte do Parana*, a privately operated land development corporation, which cleared land, laid out homestead sites, built feeder roads, and even included a railroad running through an area of 25,000 square kilometers. Along the length of the railroad, which was lengthened as the settled area expanded, new towns sites were demarcated every 15 kilometers. The company obtained land titles which were subsequently sold to individual homesteaders. Begun in the 1920's, it had a population of about 1 million by 1965 and two of its towns had over 100,000 inhabitants (Scudder, 1981, p. 21).

employment and economic multipliers within the region, they have been found to operate more as 'enclaves' rather than as economically generative activities.

Although a case-by-case assessment is called for, the actual number of such activities would be too limited to allow them to be put forward as a general component of transmigration development. This is not a general case against private sector participation which, at any rate, needs to be encouraged to expand at all levels in transmigration areas; rather it is a concern about seeking 'big bang' solutions to employment generation in frontier areas by relying on one or two large-scale enterprises to set the basis for long-term regional development. This caution would apply to both private as well as public sector large-scale industrial and industrial complex development projects.

A fourth possible approach, which may be of greatest merit in the Indonesian context, is to more effectively combine transmigration with provincial and, especially, kabupaten level planning. This alternative would be one which implies a significant shift in the balance between local and central planning. The potential benefits may, however, be great. Among them would be the encouragement of local participation in public planning through a higher degree of access to planning institutions, greater opportunity to bring 'experts' together with people who best understand the local setting, increased possibilities for more flexible planning tailored to local conditions, the building up of local capacity for economic planning and management, and possibly more opportunities to mobilize local resources for a more self-reliant, lower cost process of planning. Equally important, it would allow transmigration to be placed within an already existing political framework for regional development which covers the entire national space.

Although central planners sometimes express the view that the capacity for taking on complex development tasks is low in the provinces, a recent review of agricultural financing has found that local talent is underutilized and, further, that the absence of effective two-way communication between the central and local planning bodies hinders longer-term efforts to improve planning capabilities at the local level.¹ It is recognized, however, that training programs for local level planners in various aspects of planning would be an important part of efforts to increase the partnership between transmigration and regional planning at the provincial or kabupaten level.

These four types of attempts to integrate transmigration with other development activities may not be exhaustive of all of the possibilities, nor does one necessarily need to be pursued to the exclusion of another. But each does evoke a different image of the planning process and the role of transmigrants and local people in this process. Of the four the one which appears to be closest to the stated intentions of the government to decentralize planning, increase what in Indonesia is called regional autonomy, and promote the participation of local communities in the planning process is that which would give more power to local governments to work toward a better integration of transmigration into the longer term development plans and programs for each receiving area. At the moment, however, the choices appear to be moving in other directions. Whatever the choice or choices taken, all have served to give new voice to the need for a broader vision of the role of the

¹ Booth (1981,p.4), states that provincial and local level planning agencies "have little room for manoeuvre in planning" and that "to a large extent they are simply agents of the centre in implementing centrally determined policies."

transmigration program in the long-term development of the Indonesian archipelago.

When seen from a regional perspective, transmigration becomes one of many activities needed to generate a long-term path of stable economic growth in Indonesia's sparsely-settled regions. These activities are not limited to the agriculture sector or to village-level development, but also include urban development and strengthening rural-urban linkages, promoting non-agricultural production and employment, a continuing reconciliation between sectoral development policies and regional development opportunities, and the promotion of an increased institutional capacity for integrating and coordinating a variety of regional planning activities. As the pace of transmigration has accelerated in the 1980s, there has been increasing risk that the objectives of moving people, opening land and laying basic infrastructure have come to dominate the longer-term objective of promoting regional development, resulting in missed opportunities to use the transfers of people and capital for generating economic growth in the outer islands. During this same period, however, major changes in the international economy have combined with the continuing rapid shedding of labor from agriculture in densely-settled rural regions of the nation to make more compelling the case for integrating transmigration activities into a broader regional development framework.

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APPENDIX

FIGURE 1

PROVINCES OF INDONESIA



- | | | | |
|---------------|----------------|-------------------|-------------------|
| 1. Aceh | 9. Jakarta | 15. NTB | 21. N. Sulawesi |
| 2. N. Sumatra | 10. W. Java | 16. NTT | 22. C. Sulawesi |
| 3. W. Sumatra | 11. C. Java | 17. W. Kalimantan | 23. S. Sulawesi |
| 4. Riau | 12. Yogyakarta | 18. C. Kalimantan | 24. S.E. Sulawesi |
| 5. Jambi | 13. E. Java | 19. S. Kalimantan | 25. Maluku |
| 6. Bengkulu | 14. Bali | 20. E. Kalimantan | 26. Irian Jaya |
| 7. S. Sumatra | | | 27. E. Timor |
| 8. Lampung | | | |

TABLE A1 POPULATION & TRANSMIGRANTS IN RECEIVING [& SENDING] PROVINCES (in thousands)

PROVINCE	-----PROVINCIAL POPULATION-----					-----TRANSMIGRANT POPULATION-----		
	1980 ¹	1985 ¹	INCREASE		GR. RATE	1971-80 ¹¹	1980 - 85 [*]	1971-85
ACEH	2611.3	2999.9	602.7	388.6	2.81	9.6	61.0	70.6
N. SUMATRA	8360.9	9452.0	1739.1	1091.1	2.48	1.8	37.1	38.9
W. SUMATRA	3406.8	3779.6	613.6	372.8	2.10	34.8	23.2	58
RIAU	2168.5	2513.4	527	344.9	3.00	29.3	177.9	207.2
JAMBI	1446.0	1755.3	439.9	309.3	3.95	96.0	107.8	203.8
BENGKULU	768.1	946.9	248.8	178.8	4.27	41.7	61.1	102.8
S. SUMATRA	4629.8	5423.1	1189.2	793.3	3.21	141.3	379.0	520.3
LAMPUNG	4624.8	6089.7	1847.8	1464.9	5.66	133.3	188.2	321.5
ALL SUMATRA	28016.2	32959.9	7208.1	4943.7	3.30	487.8	1035.3	1523.1
W. KALIMANTAN	2486.1	2771.5	466.2	285.4	2.20	23.7	131.9	155.6
C. KALIMANTAN	954.4	1123.9	252.4	169.5	3.32	9.4	109.8	119.2
S. KALIMANTAN	2064.6	2285.5	365.5	220.9	2.05	41.0	91.4	132.4
E. KALIMANTAN	1218.0	1603.0	484.2	385	5.65	29.6	55.5	85.1
ALL KALIMANTAN	6723.1	7783.9	1568.3	1060.8	2.97	103.7	388.6	492.3
N. SULAWESI	2115.4	2359.0	396.9	243.6	2.20	11.2	18.8	30
C. SULAWESI	1289.6	1549.8	375.9	260.2	3.74	51.5	75.5	127
S. SULAWESI	6062.2	6547.7	881.6	485.5	1.55	36.5	25.0	61.5
S.E. SULAWESI	942.3	1091.9	228.2	149.6	2.99	37.9	92.1	130
ALL SULAWESI	10409.5	11548.4	1882.6	1138.9	2.10	137.1	211.4	348.5
MALUKU	1411.0	1617.4	321.4	206.4	2.77	4.3	35.1	39.4
NTB	2724.7	3045.1	521.2	320.4	2.25	NA	6.9	NA
E. TIMOR	555.3	608.4	NA	53.1	1.84	NA	1.0	NA
IRIAN JAYA	1173.9	1332.0	250.5	158.1	2.56	10.6	75.6	86.2
TOTAL	51013.7	58895.1	11752.1	7881.4	2.91	743.5	1753.9	2497.4
[JAVA & BALI]	[94088.6]	[103232.2]	[-15882.0]	[-9143.6]	NA	[-743.5]	[-1753.9]	[-2497.4]

¹BPS, Statistik Indonesia 1984, Tabel 3.1.2.

¹¹P. Gardner, Provincial Population Projections (Jakarta: UNCHS/GOI NUDS Project, 1985), Table 4.

^{*}Departemen Transmigrasi, Daftar Proyek Transmigrasi Yang Dibina Tahun 1985/86 (to August 1985).

S Transmigrants have been (re-)added to the provincial population totals to estimate the totals which would have been reached without transmigration.

TABLE A2 TRANSMIGRANTS* AS % 1980 PROVINCIAL AND KABUPATEN POPULATION

PROVINCE/Kabupaten	TRANS- MIGRANTS	POPULA- TION 1980	% TRANS- MIGRANTS	PROVINCE/Kabupaten	TRANS- MIGRANTS	POPULA- TION 1980	% TRANS- MIGRANTS
ACEH	60957	2611271	2.3	Kapuas	56201	258473	21.7
Aceh Utara	7533	625296	1.2	Kot Waringin Timur	23900	183166	13.0
Aceh Timur	9271	423418	2.2	Kot Waringin Barat	27730	94544	29.3
Aceh Barat	23878	288422	8.3	Barita Selatan	1940	69020	2.8
Aceh Selatan	16093	275458	5.8	Barito Utara	28	63601	0.0
Aceh Tengah	4182	163341	2.6	SOUTH KALIMANTAN	91442	2064649	4.4
NORTH SUMATRA	37070	8360894	0.4	Kota Baru	78913	193650	40.8
Tapanuli Selatan	37070	757159	4.9	Barito Kuala	11442	169952	6.7
RIAU	177880	2168535	8.2	Tabalong	1087	124939	0.9
Indragiri Ilir	10312	398276	2.6	EAST KALIMANTAN	55513	1218016	4.6
Indragiri Ulu	34246	229182	14.9	Kutai	32784	368501	8.9
Bengkalis	38368	566671	6.8	Samarinda (KM)	2375	264718	0.9
Kampar	91582	362867	25.2	Balikpapan (KM)	2586	280675	0.9
Kapulauan Riau	3372	425277	0.8	Bulongan	6069	176923	3.4
WEST SUMATRA	23153	3406816	0.7	Berau	11699	45903	25.5
Sawah Lunto	17594	224446	7.8	TOTAL KALIMANTAN	388644	6723086	5.8
Pasisir Selatan	4288	315954	1.4	NORTH SULAWESI	18817	2115384	0.9
Solok	1271	355539	0.4	Gorontalo	12146	502695	2.4
JAMBI	107819	1445994	7.5	Bolaang Mongondow	6671	299696	2.2
Bungo Tebo	24457	302386	8.1	CENTRAL SULAWESI	75531	1289635	5.9
Sarko (Sarolangun)	48585	217653	22.3	Banggai	27396	268203	10.2
Tanjung Jabung	20922	216897	9.6	Donggala	17818	581772	3.1
Batang Hari	13855	237604	5.8	Poso	21794	266708	8.2
BENGGULU	61112	768064	8.00	Buol Toli-Toli	8523	172952	4.9
Bengkulu Utara	49207	178250	27.6	SOUTH SULAWESI	24991	6062212	0.4
Bengkulu Selatan	7465	236775	3.2	Luwu	14424	503757	2.9
Rejang Lebong	4440	288256	1.5	Mamuju	10567	99796	10.6
SOUTH SUMATRA	378959	4629801	8.2	S.E. SULAWESI	92114	942302	9.8
Banyuasin	250012	591074	42.3	Kendari	59583	306675	19.4
Ogan Kom Ilir	42595	564080	7.6	Kolaka	4566	144446	3.2
Ogan Kom Ulu	27100	750799	3.6	Buton	21662	317124	6.8
Lahat	32204	484893	6.6	Muna	6303	174057	3.6
Musi Rawas	19937	367037	5.4	TOTAL SULAWESI	211453	10409533	2.0
Lematang Ilir	7111	430834	1.7	MALUKU	35139	1411006	2.5
LAMPUNG \$	188178	4624785	4.1	Maluku Tengah	35139	443940	7.9
Lampung Utara \$\$	207053	882479	23.5	WEST NUSA TENGGARA	6878	2724664	0.3
Lampung Tengah	4949	1690947	0.3	Dompu	6878	95827	7.2
TOTAL SUMATRA	1035128	28016160	3.7	IRIAN JAYA	75604	1173875	6.4
WEST KALIMANTAN	131890	2486068	5.31	Jayapura	12071	151308	8.0
Pontianak	10734	608893	1.76	Manokwari	9980	84757	11.8
Sanggau	14540	323499	4.49	Sorong	24881	134833	18.5
Sambas	92792	603104	15.39	Merauke	22229	172662	12.9
Ketapang	10870	253828	4.28	Paniai	6443	177619	3.6
Kapuas Hulu	2954	128647	2.30	EAST TIMOR	965	555350	0.2
CENTRAL KALIMANTAN	109799	954353	11.51	Bobonaro	965	61980	1.6
				ALL RECEIVING AREAS	1753811	51013674	3.4

*Repelitas II, III and IV to August 1985. (KM=Kotamadya). Source: Dept. Transmigration, 1985.

notes: \$ does not include resettlement within province; \$\$ includes resettlement from other kabupaten in Lampung

TABLE A3 TRANSMIGRATION LAND ALLOCATION IN RECEIVING PROVINCES (in km.2)

PROVINCE	PROVINCE LAND IN USE 1981*	TRANSMIGRANT HOUSING AND FARMING LAND (1985)**				
		AVAILABLE	ALLOCATED		LAND IN USE	
			TOTAL	HOUSE+LU1	TOTAL	HOUSE+LU1
ACEH	10964.7	268.5	172.7	146.1	105.7	93.5
N. SUMATRA	13725.2	147.8	127.4	92.4	97.7	66.7
W. SUMATRA	7712.9	116.0	90.0	72.5	90.0	72.5
RIAU	7101.3	801.4	679.0	470.9	311.5	295.1
JAMBI	6625.8	524.7	376.0	326.9	329.7	310.2
S. SUMATRA	10621.8	1739.6	1710.6	1070.7	1681.4	1051.2
BENGKULU	1526.5	271.6	229.6	146.4	167.5	130.6
LAMPUNG	7774.0	1017.5	1001.4	635.0	563.3	563.3
SUMATRA	66052.2	4887.1	4386.7	2960.9	3346.8	2583.2
W. KALIMANTAN	6831.0	586.1	250.4	242.6	108.9	108.5
C. KALIMANTAN	6479.1	514.2	479.2	310.0	265.2	192.3
S. KALIMANTAN	6222.7	465.2	373.1	260.2	252.5	252.5
E. KALIMANTAN	4841.0	303.4	256.1	175.8	196.5	141.0
KALIMANTAN	24373.8	1869.1	1358.8	988.6	823.1	694.3
N. SULAWESI	3549.2	79.7	65.7	48.2	48.2	48.2
C. SULAWESI	63300.9	379.5	300.4	208.7	201.4	172.3
S. SULAWESI	15307.9	120.0	114.6	73.2	87.0	60.0
S.E. SULAWESI	3362.6	388.6	363.8	241.9	277.2	223.9
SULAWESI	85520.6	967.8	844.5	572.0	613.8	504.4
MALUKU	NA	175.3	148.5	103.8	14.8	13.8
NTB	3717.2	45.1	25.2	15.0	23.4	13.2
IRIAN JAYA	NA	337.2	131.2	101.9	85.1	85.1
E. TIMOR	NA	5.9	5.9	3.7	1.7	1.7
TOTAL	179663.8	8287.6	6900.8	4746.0	4908.7	4525.8

*includes land used for: house compound, garden, shifting cultivation, and sawah. Does not include pastures, uncultivated swamps, water ponds, forested land or other unutilized land. Source: BPS Statistik Indonesia 1984, Table 5.1.1. ** Includes only transmigrant house and field land. Source: Dir. Jen. Pengerahan dan Pembinaan, Buku Data Usaha Tani 1985. 'House+LU 1=house + first field.

TABLE A4 ESTIMATED LENGTH OF TRANSMIGRATION ROADS CONSTRUCTED
1981/82 to MID-1985

PROVINCE	HOUSEHOLDS		CATEGORY OF ROAD CONSTRUCTED (Km.)		
	SERVED	(%)	PHB. *	POROS S	DESA [†]
ACEH	13,450	2.8	118	218	404
N. SUMATRA	13,795	2.9	121	223	414
W. SUMATRA	5,925	1.2	52	96	178
RIAU	41,337	8.7	364	670	1240
JAMBI	26,520	5.6	233	430	796
S. SUMATRA	64,879	13.6	568	1051	1946
BENGKULU	12,320	2.6	108	200	370
LAMPUNG	54,580	11.5	480	884	1637
SUMATRA	232,806	49.0	2,046	3,771	6,984
W.KALIMANTAN	45,485	9.5	398	737	1365
C. KALIMANTAN	40,322	8.4	353	653	1210
S. KALIMANTAN	17,117	3.6	150	277	514
E. KALIMANTAN	30,705	6.4	269	497	921
KALIMANTAN	133,629	28.0	1,170	2,165	4,009
N. SULAWESI	6,250	1.3	55	101	188
C. SULAWESI	21,242	4.5	186	344	637
S. SULAWESI	8,000	1.7	70	130	240
S.E. SULAWESI	18,450	3.9	162	299	554
SULAWESI	53,942	11.3	473	874	1,618
MALUKU	10,770	2.2	94	174	323
NTB	2,140	0.5	19	35	64
IRIAN JAYA	41,245	8.6	361	668	1227.3
E. TIMOR	1,800	0.4	16	29	54.0
TOTAL	476,332	100.0	4,179	7,717	14,280

source: Direktorat PLP, 1985.

* access road at 8.8 m./household; Smain site road at 16.2 m./household;

[†] village road 30 m./household.

TABLE A5 PROVINCIAL AND TRANSMIGRANT RICE PRODUCTION ESTIMATES

PROVINCE	TOTAL PROVINCE 1983*			TRANSMIGRANTS 1985 (in 1000 tonnes)**				
	AREA (1000 HA)	YIELD (KG/HA)	AMOUNT (1000 TON.)	AREA (1000 HA)	-----PRODUCTION ESTIMATES AT----- 0.5 Ton/ha 1.0 Ton/ha 1.5 Ton/ha Prov. T./ha.			
ACEH	255.6	3.5	893.0	9.3	3.7	7.5	11.2	26.1
N. SUMATRA	559.0	3.5	1929.7	6.7	2.7	5.3	8.0	18.4
W. SUMATRA	311.1	4.0	1254.0	7.2	2.9	5.8	8.7	23.4
RIAU	134.8	2.4	320.0	29.5	11.8	23.6	35.4	56.0
JAMBI	155.7	2.7	424.2	31.2	12.5	25.0	37.4	68.0
S. SUMATRA	419.4	2.7	1139.5	105.1	42.0	84.1	126.1	226.5
BENGKULU	82.3	2.9	238.2	13.1	5.2	10.4	15.7	30.2
LAMPUNG	324.7	3.1	998.4	56.3	22.5	45.1	67.6	138.6
SUMATRA	2242.6	3.2	7197.0	258.5	103.4	206.8	310.2	663.6
W. KALIMANTAN	280.3	2.3	639.6	10.8	4.3	8.7	13.0	19.8
C. KALIMANTAN	116.2	1.9	219.9	19.2	7.7	15.4	23.1	29.1
S. KALIMANTAN	293.7	2.5	723.7	25.2	10.1	20.2	30.3	49.8
E. KALIMANTAN	45.5	2.0	90.1	14.1	5.6	11.3	16.9	22.3
KALIMANTAN	735.7	2.3	1673.3	69.4	27.8	55.5	83.3	126.3
N. SULAWESI	68.6	3.8	259.2	4.8	1.9	3.9	5.8	14.6
C. SULAWESI	100.6	2.4	246.3	17.2	6.9	13.8	20.6	33.7
S. SULAWESI	572.8	3.9	2217.0	6.0	2.4	4.8	7.2	18.6
S.E. SULAWESI	40.5	2.2	90.9	22.4	9.0	17.9	26.9	40.2
SULAWESI	782.5	3.6	2813.4	50.4	20.2	40.3	60.5	145.0
MALUKU	20.2	1.1	21.7	1.4	0.6	1.1	1.7	1.2
NTB	228.1	3.7	852.9	1.3	0.5	1.1	1.6	3.9
IRIAN JAYA	2.2	1.9	4.2	8.5	3.4	6.8	10.2	13.0
E. TIMOR	NA	NA	1.7	0.2	0.1	0.2	0.2	NA
TOTAL	4011.3	3.1	12562.5	389.7	155.9	311.8	467.7	953.1

* Actual dry and wetland rice harvested area and amount. Source: BPS, Statistik Indonesia, 1984, Tables 5.1.3 & 5.1.6.

** Area includes only house plus first field (Lahan Usaha I) under use, with the assumption that 80 percent of this land is used for rice production and is successfully harvested. Ton = metric ton. Source: see Appendix Table A2.

TABLE A6 PRODUCTION, PRODUCTIVITY AND AREA PER HOUSEHOLD (KK) OF FOODCROPS*

PROVINCE	KK (1000)	MAIZE			PEANUTS			SOY BEANS			CASSAVA			TOTAL HA/KK
		TONNES	TN/HA	HA/KK	TONNES	TN/HA	HA/KK	TONNES	TN/HA	HA/KK	TONNES	TN/HA	HA/KK	
ACEH	13.4	455	0.9	0.03	403	0.9	0.03	85	0.9	0.01	4,329	7.8	2.52	2.6
N. SUMATRA	7.4	464	1.3	0.08	133	0.6	0.01	54	1.3	0.01	441	2.6	0.15	0.2
W. SUMATRA	5.8	321	0.5	0.03	624	1.2	0.13	2,138	0.8	0.29	7,429	8.9	11.40	11.9
RIAU	40.1	1,794	1.2	0.05	518	0.8	0.01	557	0.9	0.01	1,638	8.5	0.35	0.4
JAMBI	26.2	2,380	1.1	0.10	1,541	1.3	0.08	955	0.9	0.03	13,185	4.5	2.26	2.5
S. SUMATRA	87.0	2,225	0.9	0.02	3,764	0.6	0.03	1,839	0.6	0.01	2,844	2.8	0.09	0.2
BENGKULU	13.6	765	1.1	0.06	297	0.6	0.01	187	0.8	0.01	4,520	8.2	2.73	2.8
LAMPUNG	50.8	8,392	2.3	0.38	1,760	1.2	0.04	6,007	1.2	0.14	2,626	3.2	0.17	0.7
W.KALIMANTAN	29.3	760	0.9	0.02	379	0.7	0.01	NA	NA	NA	6,835	6.2	1.45	NA
C. KALIMANTAN	25.7	389	0.5	0.01	5	0.4	0.00	175	0.3	0.00	1,425	4.4	0.24	0.3
S. KALIMANTAN	23.3	591	1.1	0.03	177	0.5	0.00	87	0.3	0.00	9,633	19.0	7.86	7.9
E. KALIMANTAN	15.2	1,571	3.8	0.39	342	1.5	0.03	66	1.1	0.00	378	8.0	0.20	0.6
N. SULAWESI	4.0	857	1.3	0.28	110	1.4	0.04	928	1.0	0.23	398	4.2	0.42	1.0
C. SULAWESI	19.0	3,985	3.7	0.78	551	0.7	0.02	977	0.8	0.04	3,105	8.6	1.41	2.3
S. SULAWESI	6.0	182	0.7	0.02	14	0.4	0.00	272	0.4	0.02	617	3.6	0.37	0.4
S.E. SULAWESI	19.4	3,658	1.9	0.36	1,152	1.7	0.10	267	0.2	0.00	5,278	3.2	0.87	1.3
MALUKU	8.8	483	0.7	0.04	370	1.8	0.08	266	1.1	0.04	107	4.7	0.22	0.4
NTB	1.5	699	1.0	0.47	10	0.3	0.00	16	0.3	0.00	215	10.7	1.53	2.0
IRIAN JAYA	16.9	699	0.7	0.03	396	0.7	0.02	1,152	0.8	0.05	1,022	1.1	0.07	0.2
E. TIMOR	0.3	16	0.7	0.04	1	0.3	0.00	1	0.4	0.00	NA	NA	NA	NA
TOTAL	413.2	30,670	1.3	0.10	18,546	0.9	0.04	16,028	0.8	0.03	66,325	6.3	1.01	1.2

*Dir. Jen. Pengolahan dan Pembinaan, Dir. Bina Usaha Ekonomi, Buku Data Usaha Tani (Jakarta, 1985). Area/KK implied from data on number of households, total production and production per hectare.

TABLE A7 AVERAGE TRANSMIGRANT HOUSEHOLD MONTHLY INCOME BY YEAR OF ARRIVAL & ACTIVITY (Rp.)

YEARS AT SITE	ALL SITES				DRYLAND SITES					
	AGRICULTURE			NON- AGRIC.	TOTAL INCOME	AGRICULTURE			NON- AGRIC.	TOTAL INCOME
FOOD CROPS	OTHER AGRIC.	TOTAL AGRIC.	FOOD CROPS			OTHER AGRIC.	TOTAL AGRIC.			
≤ 1	5551	1905	7456	2560	44360	7806	602	8408	0	55897
1-2	12098	969	13067	3550	63492	12806	2890	15696	2891	59896
2-3	10156	3322	13478	5869	52127	9620	3697	13317	4875	60472
3-4	12605	5796	18401	8424	56031	13380	5346	18726	10497	NA
4-5	19427	6042	25469	5761	64436	24719	6419	31138	4575	75887
5-6	21213	4597	25810	4489	65558	20634	4714	25348	3389	64896
6-7	10505	8454	18959	8517	61196	7096	2941	10037	10151	56987
7-8	11883	16447	28330	1860	54918	7456	26993	34449	424	59790
8-9	7700	9981	17681	2284	53809	5015	11548	16563	2206	46888
9-10	12852	8874	21726	5115	48481	9872	7372	17244	2373	44617
10-11	10874	3013	13887	12334	103529	NA	NA	NA	NA	NA

YEARS AT SITE	TIDAL SITES				
	AGRICULTURE			NON- AGRIC.	TOTAL INCOME
FOOD CROPS	OTHER AGRIC.	TOTAL AGRIC.			
≤ 1	4663	900	5563	0	24016
1-2	3033	447	3480	0	28111
2-3	10705	2321	13026	5499	33456
3-4	9817	6649	16466	3529	37654
4-5	9941	5806	15747	1138	31938
5-6	37977	6503	44480	3774	64361
6-7	27748	9256	37004	1857	58682
7-8	24293	3399	27692	2000	39574
8-9	23501	6664	30165	0	59540
9-10	26146	15094	41240	17884	61333
10-11	12529	1796	14325	14133	110562

source: BPS, Transmigrant Income Survey 1984

TABLE A8 % HOUSEHOLDS USING MORE/LESS OR SAME LAND

	SAMPLE (No.)			DISTRIBUTION (%)			
	MORE	LESS	SAME	MORE	LESS	SAME	TOTAL
BATURAJA	93	46	39	52.2	25.8	21.9	100.0
PEMATANG PANGGANG	96	160	215	20.4	34.0	45.6	100.0
AIR SUGIHAN	88	14	108	41.9	6.7	51.4	100.0

Source: BPS, Transmigration Income Survey 1984.

TABLE A9 CUMULATIVE % OF HOUSEHOLDS BY MONTHLY INCOME & PROVINCE*

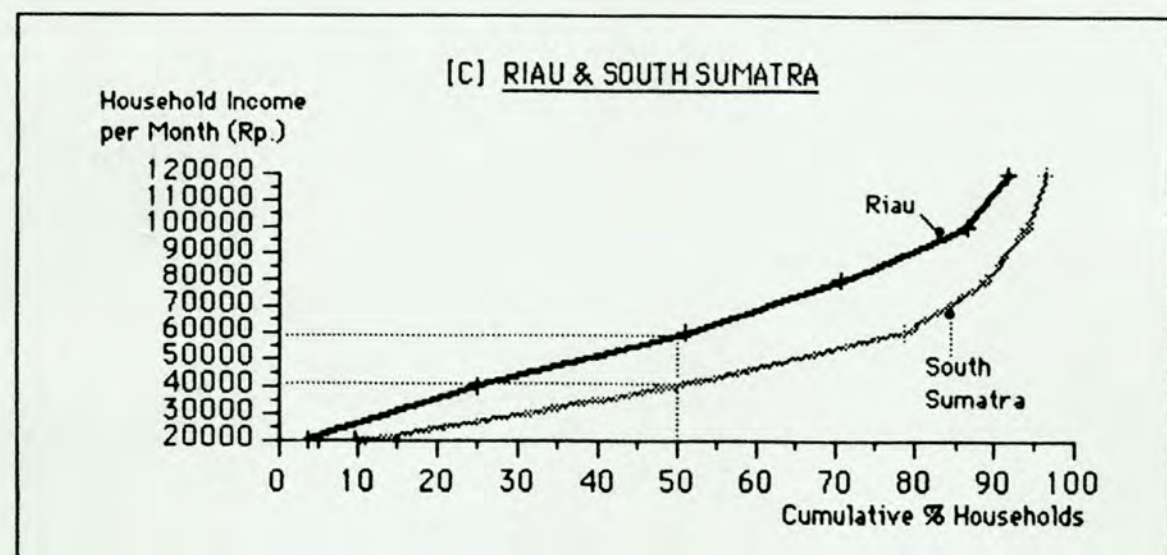
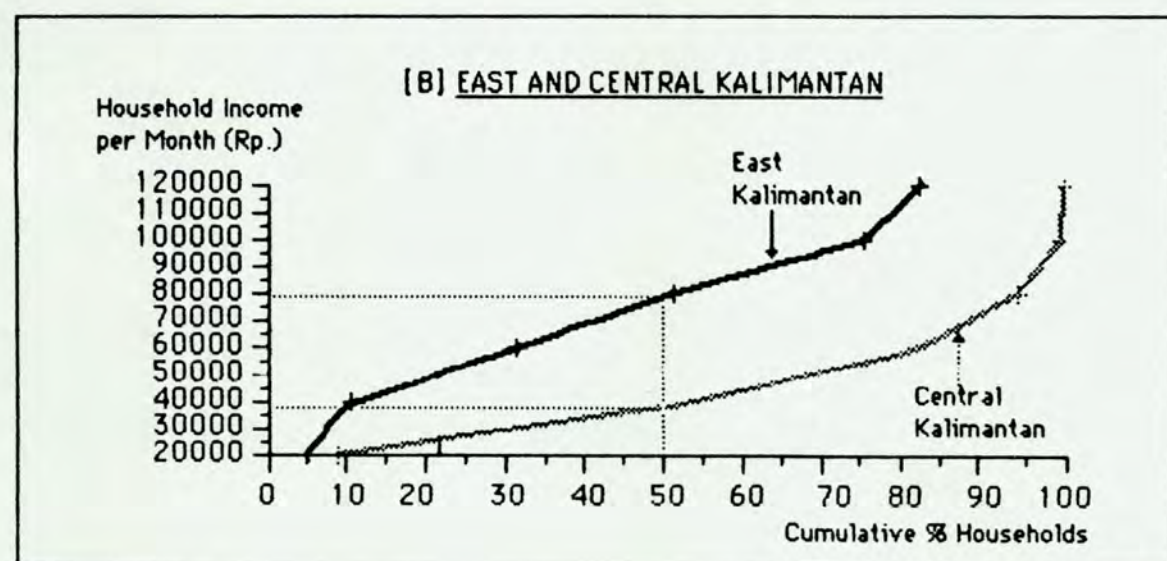
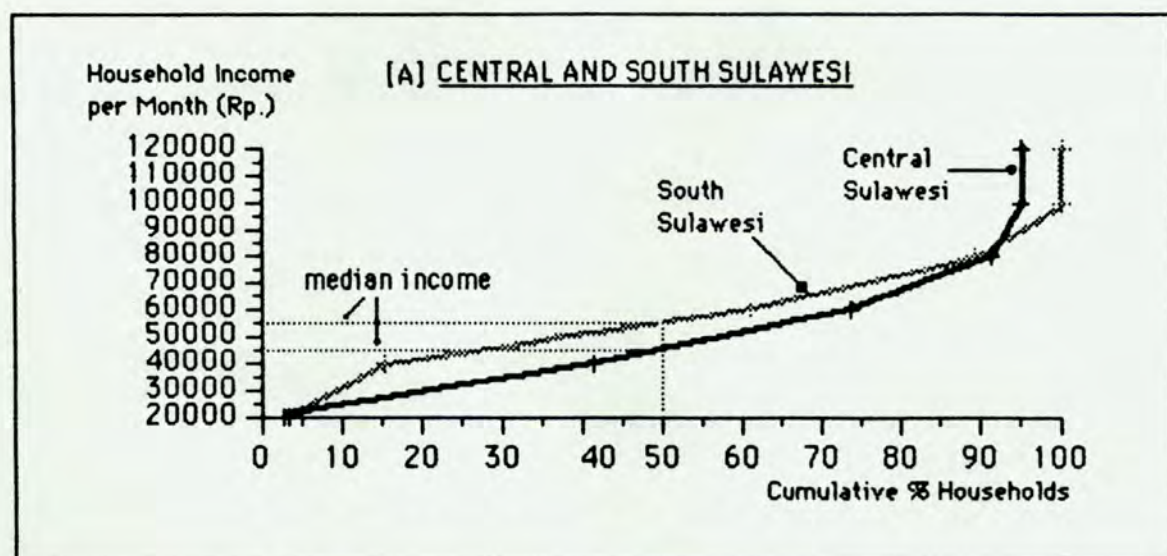
INCOME LEVEL †	--SUMATRA--		--KALIMANTAN--		--SULAWESI--		TOTAL
	RIAU	SOUTH	CENTRAL	EAST	CENTRAL	SOUTH	
20,000	3.7	10.1	8.8	0.0	2.5	3.3	7.6
40,000	25.1	51.2	51.6	10.5	41.5	15.3	42.7
60,000	51.0	78.4	81.2	31.4	73.8	61.0	70.6
80,000	70.8	88.9	94.0	51.2	91.3	89.3	84.4
100,000	86.8	93.7	98.9	75.6	95.1	100.0	91.8
120,000	91.7	95.8	99.6	82.6	95.1	100.0	94.6

*Income per household per month.

† Co. 1 figures indicate upper level of each income group.

Source: BPS, Transmigrant Income Survey 1984.

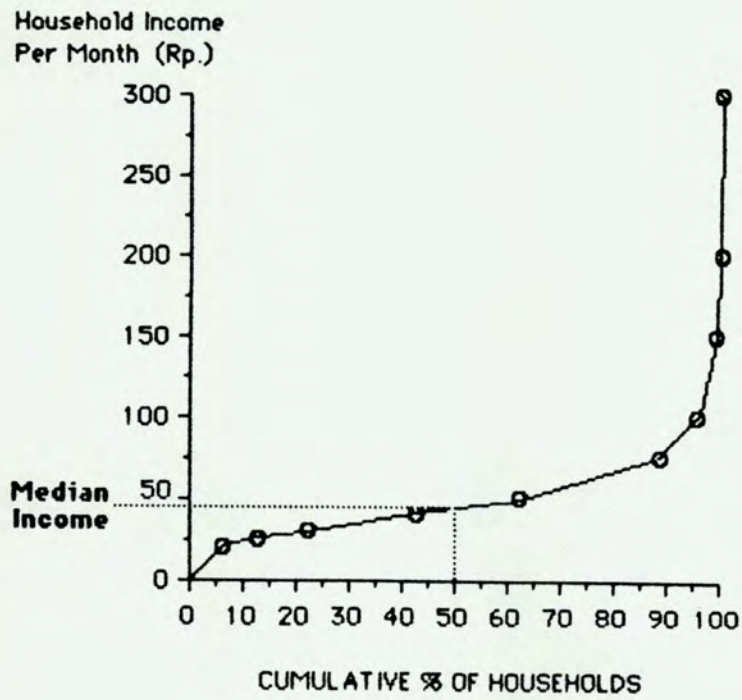
FIGURE 2 ESTIMATED MEDIAN TRANSMIGRANT INCOME BY PROVINCE 1984



Source: BPS, Transmigrant Income Survey 1984.

FIGURE 3

CUMULATIVE DISTRIBUTION OF HOUSEHOLD INCOME
ALL TRANSMIGRATION SITES, 1984



source: BPS, Transmigrant Income Survey 1984.

TABLE A10 DISTRIBUTION OF TRANSMIGRANTS BY REPELITA
AND TYPE OF SETTLEMENT (%)

	REPELITA II (1974/75-78/79)		REPELITA III (1979/80-83/84)		TOTAL RII & RIII	
DRYLAND	69.8	(16.6)	72.4	(83.4)	72.0	(100.0)
TIDAL	12.6	(9.9)	23.6	(90.1)	21.7	(100.0)
ESTATE	17.6	(47.6)	4.0	(52.4)	6.3	(100.0)
TOTAL	100.0	(17.1)	100.0	(82.9)	100.0	(100.0)

Source: BPS, Survey Pendapatan di Daerah Transmigrasi 1984.

TABLE A11 RURAL ECONOMIC DENSITY INDEX 1980/1981¹

PROVINCE	AREA UTILIZ. (Km2) (A)	GRDP AGRIC. (Rp bn) (B)	GRDP/ Km2 [B+C] (C)	INDEX* GRDP/ AREA (D)	1980 AG. L.FORCE (1000) (E)	GRDP/ L.FORCE (Rp'000) (F)	L.FORCE /Km2 [E+A] (G)	L.F./Km2 /INDEX [F*D] (H)	DENSITY INDEX* [H/1.22] (I)
ACEH	10965	331	30	60	589	561	54	90	73
N. SUMATRA	13725	951	69	138	1971	482	144	104	85
W. SUMATRA	7713	228	30	59	686	332	89	151	124
RIAU	7101	184	26	52	411	448	58	112	92
JAMBI	6626	147	22	44	353	416	53	121	99
S. SUMATRA	10622	454	43	85	1056	430	99	117	96
BENGKULU	1526	67	44	87	226	294	148	171	140
LAMPUNG	7774	438	56	112	1162	377	149	134	109
DKI JAKARTA	796	67	85	168	37	1819	46	28	23
W. JAVA	14185	1852	131	260	4062	456	286	110	90
C. JAVA	23759	1696	71	142	5408	314	228	160	131
YOGYAKARTA	2706	199	74	146	649	307	240	164	135
E. JAVA	31426	2705	86	171	6446	420	205	120	98
W.KALIMANTAN	6831	201	29	59	785	257	115	196	161
C. KALIMANTAN	6479	97	15	30	268	363	41	139	114
S. KALIMANTAN	6223	178	29	57	440	405	71	124	102
E. KALIMANTAN	4841	85	18	35	182	466	38	108	88
N. SULAWESI	3549	216	61	121	366	590	103	85	70
C. SULAWESI	63301	115	2	4	298	385	5	131	107
S. SULAWESI	15308	714	47	93	949	753	62	67	55
S.E. SULAWESI	3363	83	25	49	192	430	57	117	96
MALUKU	NA	155	NA	NA	284	547	NA	NA	NA
BALI	2787	258	93	184	482	535	173	94	77
NTB	3717	194	52	104	483	401	130	125	103
NTT	7442	200	27	53	782	256	105	197	161
IRIAN JAYA	NA	140	NA	NA	267	526	NA	NA	NA
E. TIMOR	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL	262764	11658	44	88	28283	412	108	122	100

¹Land use and GRDP in agriculture for 1981; Agricultural Labor force from 1980 census.

*Land index based on value added per area of utilized land per province divided by national average. Density Index based on population per km of utilized land weighted by land index.

Higher index value = higher density relative to land productivity. Indonesia=100

Sources: BPS, Pendapatan Regional Propinsi-Propinsi di Indonesia 1977-81; BPS, Statistik Indonesia 1984; BPS, 1980 Population Census.

TABLE A12
CHANGES IN TRANSMIGRATION DEVELOPMENT BUDGETS AMONG RECEIVING PROVINCES
1979-82 & 1985/86

PROVINCE	TRANSMIGRATION DEVELOPMENT BUDGET		DISTRIBUTION AMONG RECEIVING PROVINCES*		TRANSMIGRATION AS % TOTAL DEV. BUDGET	
	1979-82 [†]	1985/86 ^{††}	1979-82	1985/86	1979-82 [†]	1985/86
ACEH	15,193	16,017	3.3	2.6	11.0	15.0
N. SUMATRA	6,659	17,460	1.4	2.8	3.0	8.5
W. SUMATRA	5,147	9,016	1.1	1.5	3.0	6.6
RIAU	62,956	49,397	13.6	8.1	24.0	35.8
JAMBI	28,367	30,275	6.1	4.9	29.0	37.5
S. SUMATRA	114,486	60,966	24.7	9.9	44.0	29.8
BENGKULU	16,505	14,472	3.6	2.4	20.0	24.1
LAMPUNG	10,316	30,068	2.2	4.9	9.0	25.7
W. KALIMANTAN	29,098	61,781	6.3	10.1	26.0	44.4
C. KALIMANTAN	22,765	49,084	4.9	8.0	33.0	48.0
S. KALIMANTAN	39,030	26,695	8.4	4.4	27.0	24.1
E. KALIMANTAN	26,297	60,046	5.7	9.8	29.0	42.9
N. SULAWESI	7,265	7,519	1.6	1.2	8.0	8.9
C. SULAWESI	20,622	27,111	4.4	4.4	25.0	33.9
S. SULAWESI	6,678	15,582	1.4	2.5	4.0	9.7
S.E. SULAWESI	24,755	26,280	5.3	4.3	37.0	35.7
MALUKU	11,634	23,804	2.5	3.9	17.0	25.4
IRIAN JAYA	16,668	87,699	3.6	14.3	27.0	45.7
TOTAL	464,441	613,272	100.0	100.0	20.0	16.5

*Figures do not include amounts allocated to Jakarta or sending provinces.

[†] source: UNDP/OPE, Transmigration Programme Second Phase Evaluation (Jakarta, 1982), Table 3.9. Figures are totals for three budget years and do not apparently include carry-overs (siap) from previous years.

^{††} source: Min. Finance, Laporan 1985/86 dari S.D.P.D Bandung. Figures include siap from 1982/83 to 1984/85.

TABLE A13 TOTAL LENGTH OF ROAD AND DAMAGED ROAD 1984 (Km.)

PROVINCE	KABUPATEN ROADS		OTHER ROADS		ALL ROADS	
	TOTAL	DAMAGED	TOTAL	DAMAGED	TOTAL	DAMAGED
ACEH	7076	3982	2906	442	9982	4424
N. SUMATRA	9944	3753	5188	1396	15132	5149
W. SUMATRA	5860	3593	2772	416	8632	4009
RIAU	4918	3075	2344	328	7262	3403
JAMBI	2533	1574	2047	269	4580	1843
S. SUMATRA	5801	2937	3891	307	9692	3244
BENGKULU	2496	1009	1031	89	3527	1098
LAMPUNG	2589	1215	2007	326	4596	1541
W.KALIMANTAN	2370	774	1812	517	4182	1291
C. KALIMANTAN	3633	1450	722	67	4355	1517
S. KALIMANTAN	2942	1479	1177	62	4119	1541
E. KALIMANTAN	788	173	2550	977	3338	1150
N. SULAWESI	3982	2369	1645	297	5627	2666
C. SULAWESI	3509	1931	2800	906	6309	2837
S. SULAWESI	14413	6210	3394	179	17807	6389
S.E. SULAWESI	3707	1503	1305	239	5012	1742
MALUKU	2408	1001	1850	774	4258	1775
NTB	3420	1429	928	48	4348	1477
IRIAN JAYA	4551	2050	643	108	5194	2158
E. TIMOR	0	-	1687	-	1687	569
TOTAL	86940	41507	42699	8316	129639	49823

source: BPS, STATISTIK INDONESIA 1984, Tabel B.1.5a.

* rusak & rusak berat

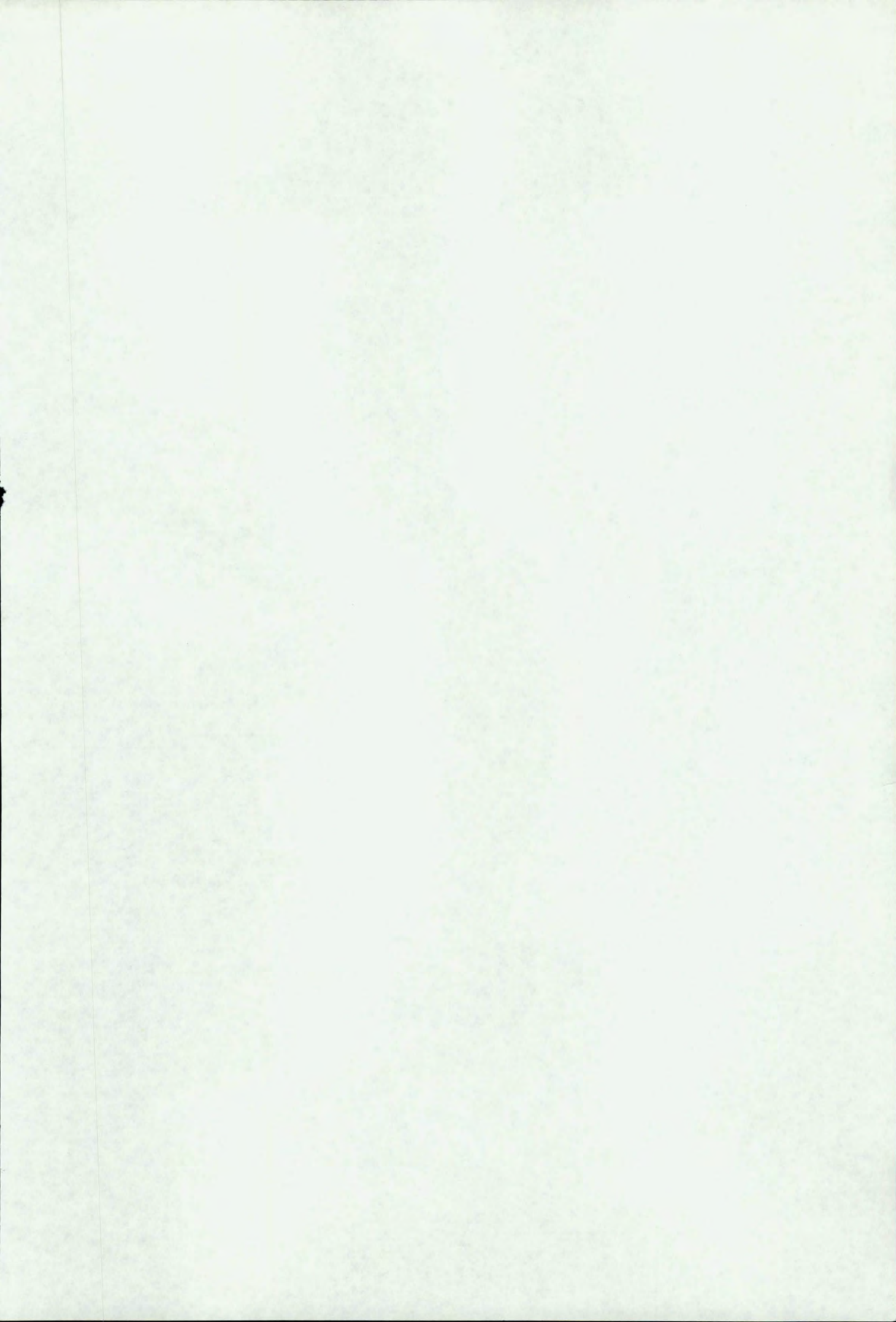
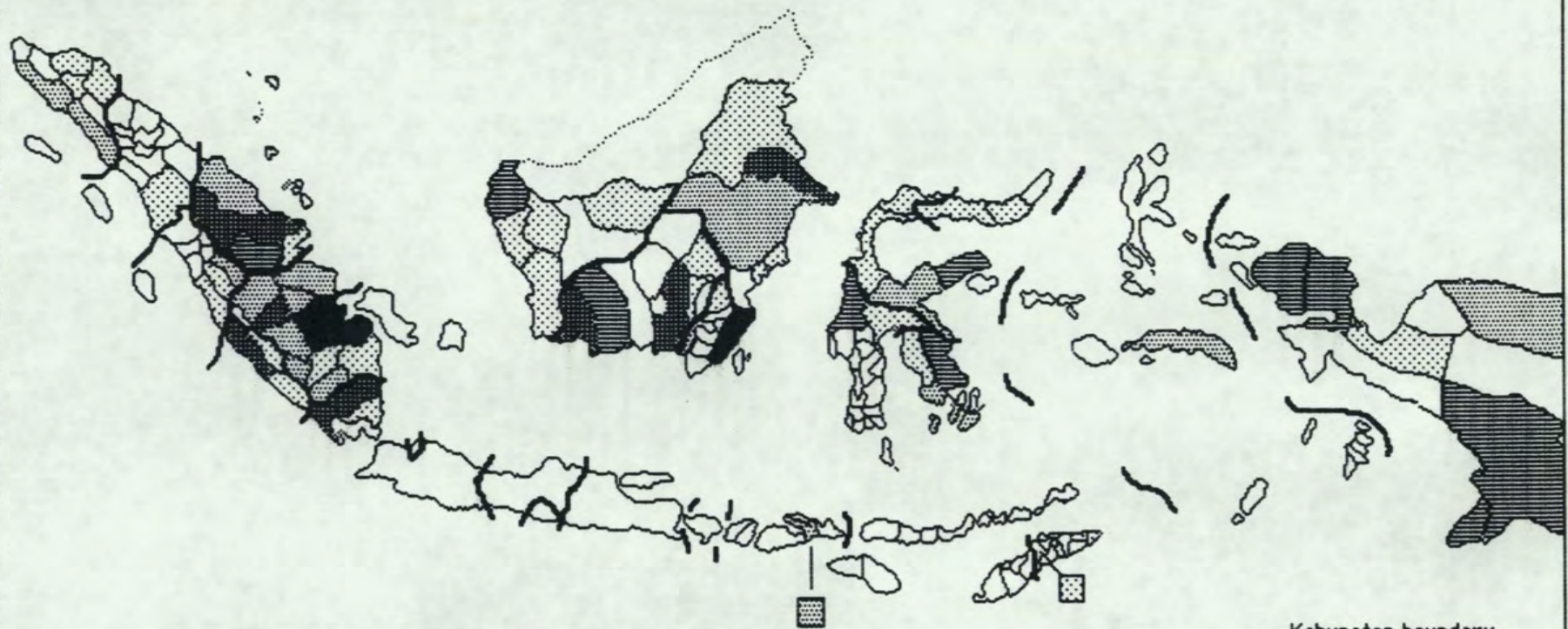


FIGURE 6 REPELITA III & IV TRANSMIGRANTS* AS % 1980 KABUPATEN POPULATION



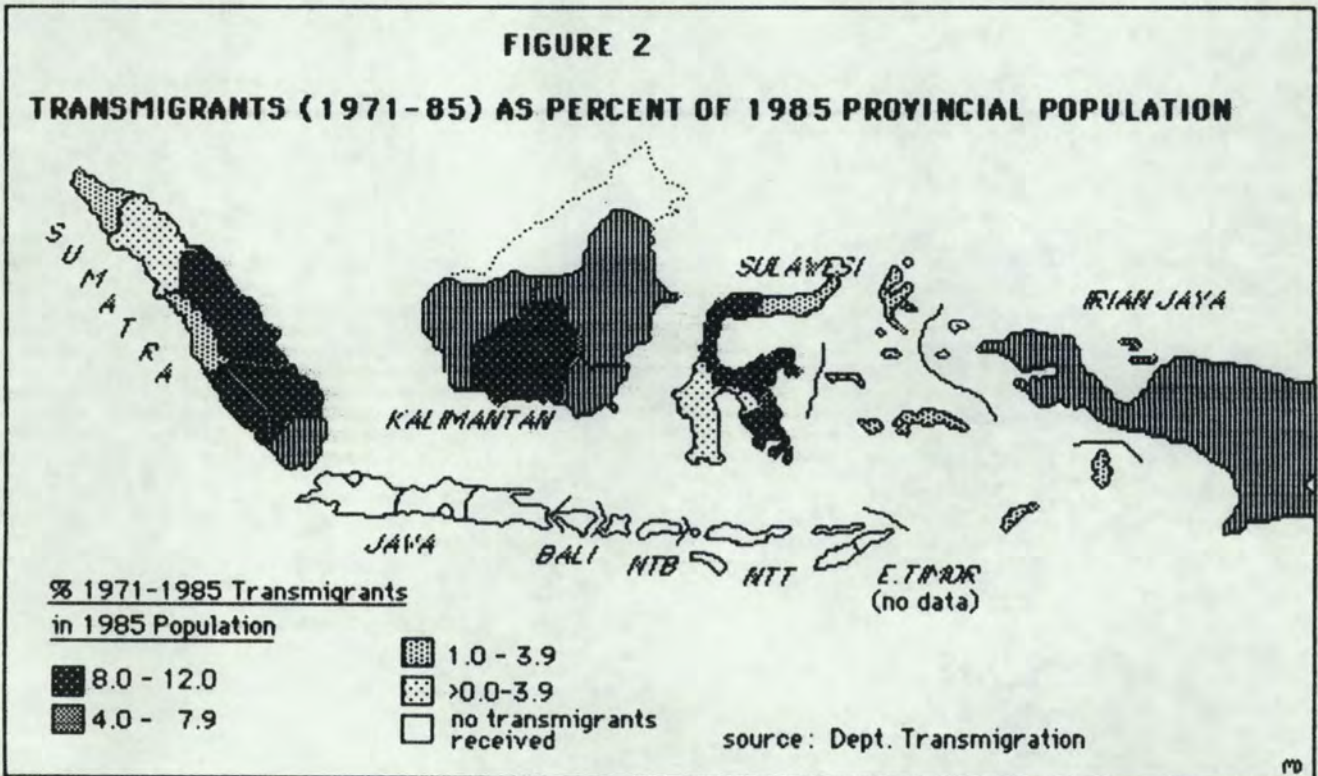
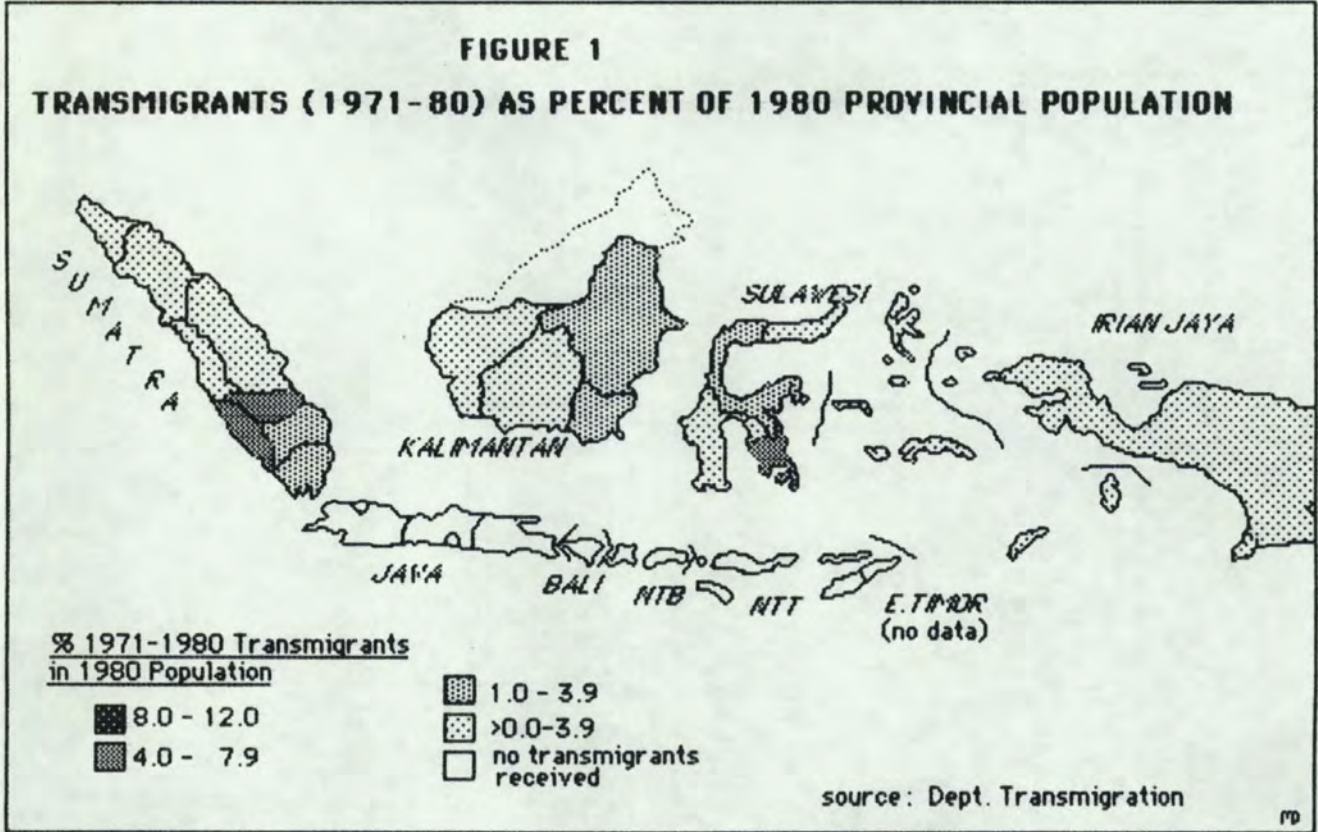
— Kabupaten boundary
 — Provincial boundary

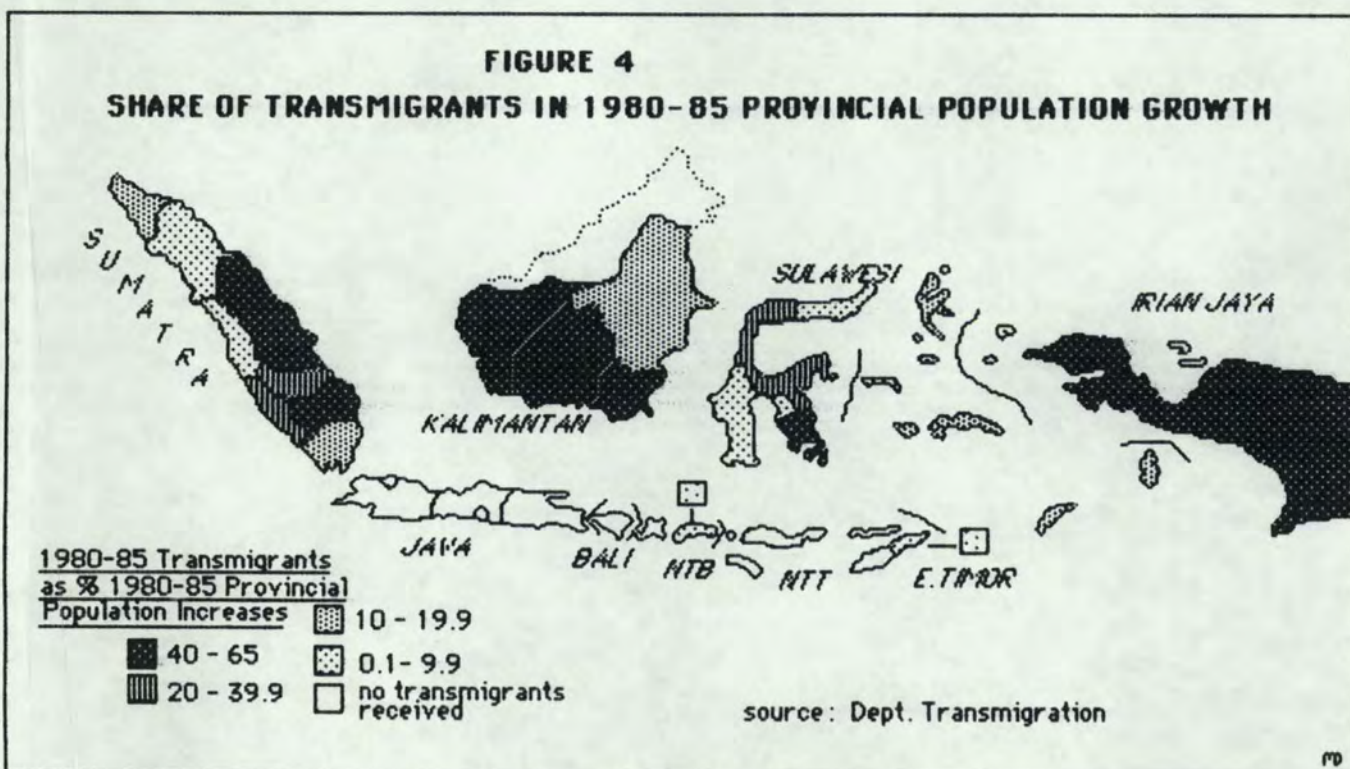
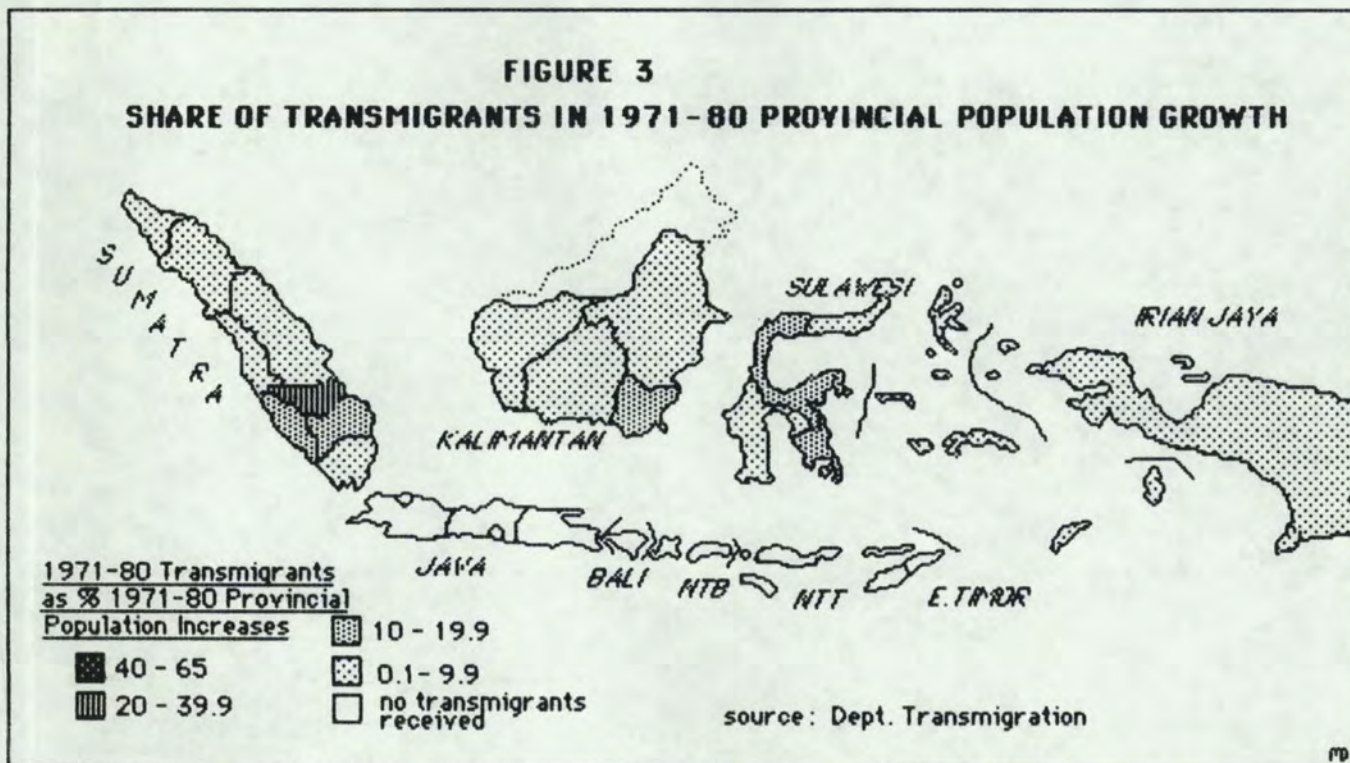
No. Transmigrants/1980 Population (in %)

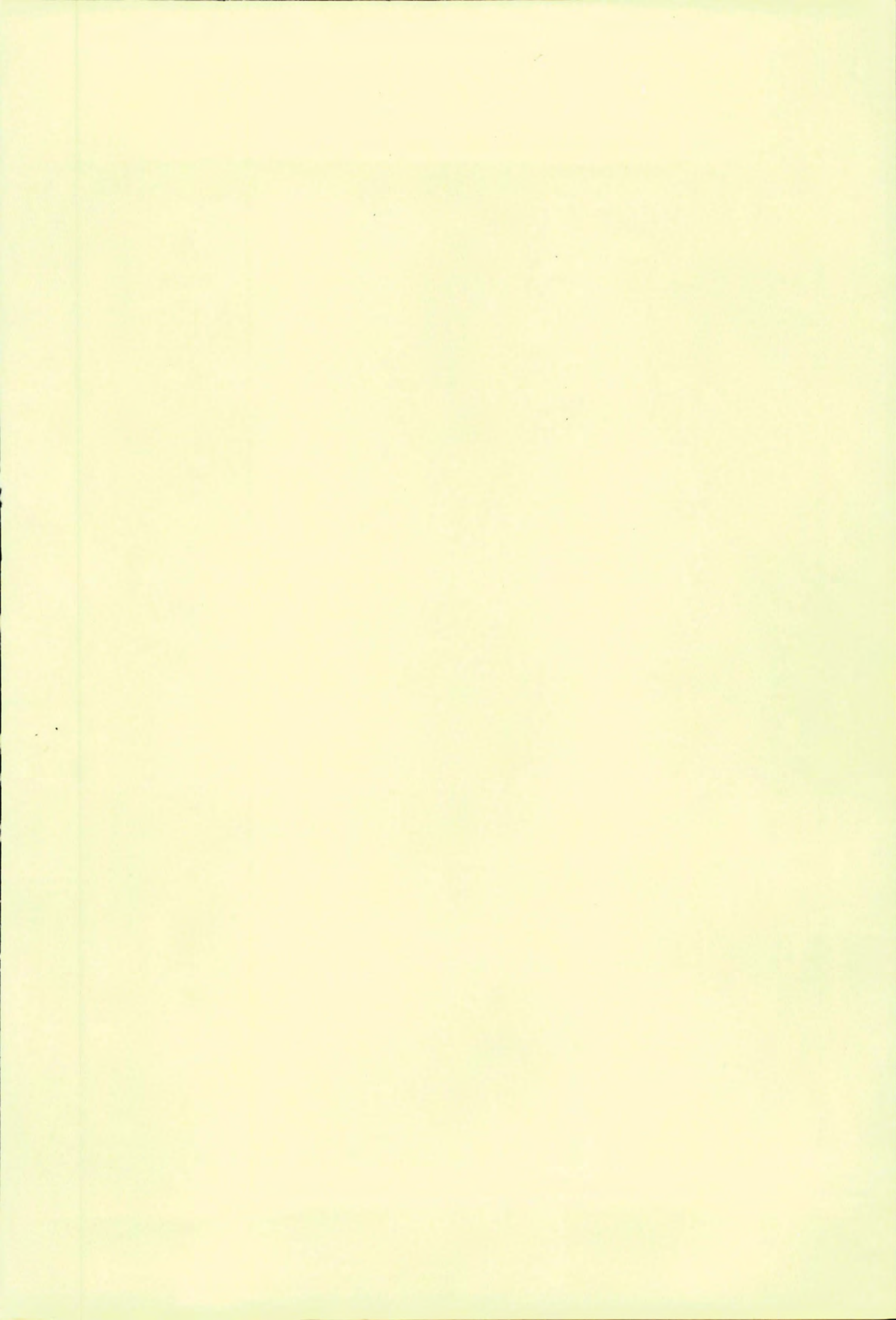
- | | |
|-----------------|--------------------|
| ■ 40.8 - 42.3 % | ▨ 5.0 - 9.9 % |
| ▩ 20.0 - 29.3 % | ▧ 0.04 - 4.9 % |
| ▪ 10.0 - 19.9 % | □ no transmigrants |

source: Dept. Transmigration, Daftar Poyek Transmigrasi Yang Dibina Tahun 1985/86 and BPS, 1980 Census, series L2.

*Repelita III and IV Transmigrants only; covers approx. years 1979/80-August 1985.







STUDY OF THE IMPACT ON INDONESIA'S PRODUCTION FOREST
OF SHIFTING CULTIVATION

1. Justification of Project

1.1 Shifting cultivation, a practice encountered throughout Indonesia, is most often equated with "slash-and-burn agriculture". Under this cultivation system, areas of primary or secondary forest are cleared, most of the felled timber is burned, and food crops or other plants for subsistence use are established. The burning is necessary to create a clean site and fertile soil, and to eliminate seeds of potential weeds. The cleared site is usually cultivated for one or more years, until the soil starts to lose its fertility or until weeds from the surrounding forest take over. In the past, shifting cultivators abandoned such land and did not return until the forest had regenerated and could be burned and cultivated again.

1.2 To ensure sustainable cultivation, it is estimated that about twenty years of fallow are required for every year of cultivation, although this varies considerably according to the type of soil. In recent times, however, these rotation periods have become progressively shorter under the impact of population pressures, thus reducing the ability of the land to regenerate. Immigrants have also encroached on land under traditional forms of rotation and in some instances have introduced new forms of cultivation incompatible with sustainable land use. As shifting cultivation is also practiced by families who plant crops in excess of their subsistence requirements and who

market their product, increasing amounts of land, particularly vulnerable land on hillsides where drainage is best suited for food crops, are thus being brought into the production cycle and more and more forest is being destroyed. The greatly reduced rotation cycles have led to serious degradation of the quality of vast tracts of land throughout Indonesia.

1.3 As shown in Table 1, the Department of Forestry estimates that some 10% of total forest area in Kalimantan, Sulawesi and Nusa Tenggara is affected by the activities of shifting cultivators. For Indonesia as a whole, FAO estimates that some 13.5 million ha are in the shifting cultivation/fallow cycle (about 11 to 12 percent of the total forest area). This figure may understate the magnitude of the problem and other observers have suggested that the area might be in the order of 30 million ha. As many as 1.5 million families engage in some form of shifting cultivation. It is not known with any certainty how much new forest is actually put into agricultural production in the process of shifting cultivation, but it may be over one million ha annually.

Table 1: FOREST AREA AND FAMILIES IN SHIFTING CULTIVATION, 1984

Island	Estimated area of shifting cultivation ----- 000 ha ----- (1)	Total forest area ----- (2)	Proportion of forest area in shifting cultivation -- per cent -- (3)	Number of families in shifting cultivation -- 000's -- (4)	Proportion of total population in shifting cultivation -- per cent -- (5)
Sumatra	924	30,208	3.1	262	4.9
Kalimantan	4,477	44,968	10.0	228	17.3
Sulawesi	1,352	12,879	10.5	244	12.7
Nusa Tenggara	568	5,547	10.2	251	23.0
Total	7,321	93,601	7.8	985	9.2

Source: GOI/IIED Review "Forest Policies in Indonesia", Background Paper.

1.4 Shifting cultivation cannot be unambiguously defined; there are innumerable different types of shifting cultivators and some are able to ensure sustainable management practices while other are not. Whether the activities are traditional or not, however, it is necessary to understand the social, cultural and economic factors that motivate such practices in order to minimize their destructiveness.

2. Objectives

2.1 The long-term objective of the study is to reduce the pressures to bring forest land under shifting cultivation, by promoting sustainable and environmentally stable systems of agriculture under conditions of increasing population density. The study will give special attention to the pressure being created in production forest areas in which the inflow of shifting cultivators along logging roads creates localised pressure on the forest land and makes the practise of sustained yield forestry very difficult.

2.2 The immediate objectives are:

- (a) to assess the area under shifting cultivation by province;
- (b) to evaluated the economic impact of such activity;
- (c) to develop a typology of shifting cultivation and describe the practices of representative groups and their claims to the land under cultivation; and
- (d) to recommend alternative approaches for reducing environmental degradation with special reference to the rproduction forest areas while minimizing any reducion in the welfare of local peoples.

In carrying out this study, the capacity of the Department of Forestry to understand and address human and social issues will also be strengthened.

3. Project Design

3.1 It is a fundamental assumption of this study that shifting cultivators represent a very diverse group including sedentary agriculturalists engaged in marginal shifting cultivation, immigrants seeking land for permanent settlement, and traditional cultivators for whom shifting cultivation is the basic mode of subsistence; and it is assumed that this diversity will both permit and require a broad spectrum of programs if environmental degradation is to be reduced. It is further hypothesized that the total number of people dependent entirely on shifting cultivation for their subsistence is small, and that these people cause relatively little harm to the environment. It follows that programs to upgrade the production systems of largely sedentary agriculturalists, and to permit immigrants access to planned settlements may do more to limit resource depletion than past programs to relocate traditional shifting cultivators from forest concessions. These hypotheses are subject to review. Finally, the design of the study reflects the conviction that only programs based on a sound knowledge of local people and designed in consultation with them will have a strong probability of success.

3.2 The proposed two-year study would be carried out by consultants engaged by the Department of Forestry and would consist of three phases. In the first phase, background information would be collected on the area under shifting cultivation, on current rules and regulations and/or programs applying to shifting cultivation. An evaluation of the economic impact of shifting cultivation would be carried out, and a typology of shifting cultivators would be developed in consultation with local officials. The second phase would involve a detailed analysis of representative types of shifting cultivators, description of traditional land rights (adat), and

consultation with local people on appropriate methods of upgrading agricultural systems and limiting, where possible, the need for shifting cultivation. In the third phase, policy options would be developed, in consultation with Government officials and local peoples, and the impact of proposed options evaluated. The final report should indicate alternative strategies for minimizing environmental degradation discuss their pros and cons and make specific recommendation on strategies to be followed. It would identify potential projects or programs sustainable for World Bank or other agency support in which the various possible approaches to minimized impact of shifting allocation on forest resource management could be tested.

4. Work Plan

4.1 Phase I: Background (6 months)

(a) Analysis of Land Use Data

Data gathered by FAO and by the Land Resources Development Centre (LRDC) under the World Bank-assisted Transmigration III/V projects can be used to analyze the area under shifting cultivation and to assess the amount of such land (i) in Protection, Conversion and Production Forest; and (ii) under different land forms, i.e. steep hills (with high erosion potential), flat lands, etc. LRDC data are only available for provinces with transmigration potential, but these are also the most heavily forested provinces. Data from this source are not available for more densely settled areas such as NTT. If shifting cultivation is a problem in these areas, the quality of existing data should be assessed and recommendations made on further studies.

(b) Other Data

Information should be collected on legislation relating to shifting cultivation and on the history and impact of past programs intended to address the problem. General information on land tenure, particularly among shifting cultivators, should be gathered. Also, existing information describing different types of shifting cultivators should be collected.

(c) Initial Assessment

An assessment should be made of the economic impact of shifting cultivation in terms of losses to both the logging industry and to agriculture as a result of environmental degradation and flooding. The extent of the problem should be evaluated in different provinces and the impact of apst programs in restricting shifting cultivation should be assessed.

(d) Preparation of Terms of Reference for Phase II

At the conclusion of Phase I, a draft report evaluating the impact of shifting cultivation and presenting a preliminary typology of shifting cultivators would be prepared. This would lead to detailed terms of reference for Phase II which lay out a methodology for further study.

4.2 Phase II: Detailed Study of Shifting Cultivators (12 months).

The main objectives of this phase of the study would be to develop a more detailed picture of shifting cultivators in selected provinces; to describe the pressures leading to shifting cultivation, and to describe and evaluate land rights and the understanding local people have of them and to

examine the inter relationships between shifting cultivation and production forest management. The team of researchers would review with the people and local officials, programs and policies which could potentially reduce the need for cultivation in restricted areas or on steep slopes. To the extent possible, the team should try to determine the area under shifting cultivation by different kinds of cultivators, although this will be difficult. The scope of work will be set out in terms of reference developed in Phase I (4.1 (d) above), and will involve--to the greatest extent possible--an approach that involves participation of the local people. The findings of this work will be summarized in a set of background papers (with a summary report) 12 months after this phase commenced.

4.3 Phase III: Preparation, Discussions and Revisions of the Main Report (6 months).

In Phase III, a draft report will be prepared which describes the existing situation, identifies policy options and assesses their impact on shifting cultivation and on the welfare of the groups involved. Ideally, the team would recommend ways to restrict destructive cultivation among people who have alternative sources of income, and to permit such cultivation where no viable alternative exists. Special attention would be paid in the part of the study to identifying the potential of industrial cost crop tree farming to provide a livelihood for shifting cultivators along the lines of the successful scheme in Philippines. In about month 20, the draft report including assessment and options would be presented to Government. The report would then be discussed with local peoples, Government officials, the Bank and other interested parties, and revised in light of their recommendations and objections. A final report would be issued two years after the study commenced.

5. Outputs

5.1 At the conclusion of Phase I, a report addressing the following broad topics will be prepared (for details, see section 4):

- (a) an assessment of areas under shifting cultivation and a review of existing literature on the subject;
- (b) preparation of a preliminary typology of shifting cultivators; and
- (c) a methodology and terms of reference for studying these groups in Phase III.

5.2 At the end of Phase II Background Papers should be produced on the groups studied which identifies policy options and assess their impact on shifting cultivation practices and the forest and on the welfare of the groups involved. An executive summary will describe the findings of these reports.

5.3 At the end of Phase III a final report will be prepared which incorporates in greater detail the concerns and recommendation of local peoples, Government officials and other interested parties and which recommends strategies which optimize the forest and social concerns. Phase III of the report will identify provide situation in the production forest areas where a project(s) could be introduced to test out the recommendations of the study. It will define the broad scope of such a project(s) possible phasing and likely costs and return.

6. Institutional Framework and Staff Management

6.1 In order to maximize the utility of this study, MOF will identify the appropriate Directorate or Directorates to be involved with human issues in

the design and implementation of Forestry Department policy. This Directorate(s) will engage consultants and monitor implementation under the guidance of a Steering Committee consisting of representative from MOF, MOPE and Home Affairs.

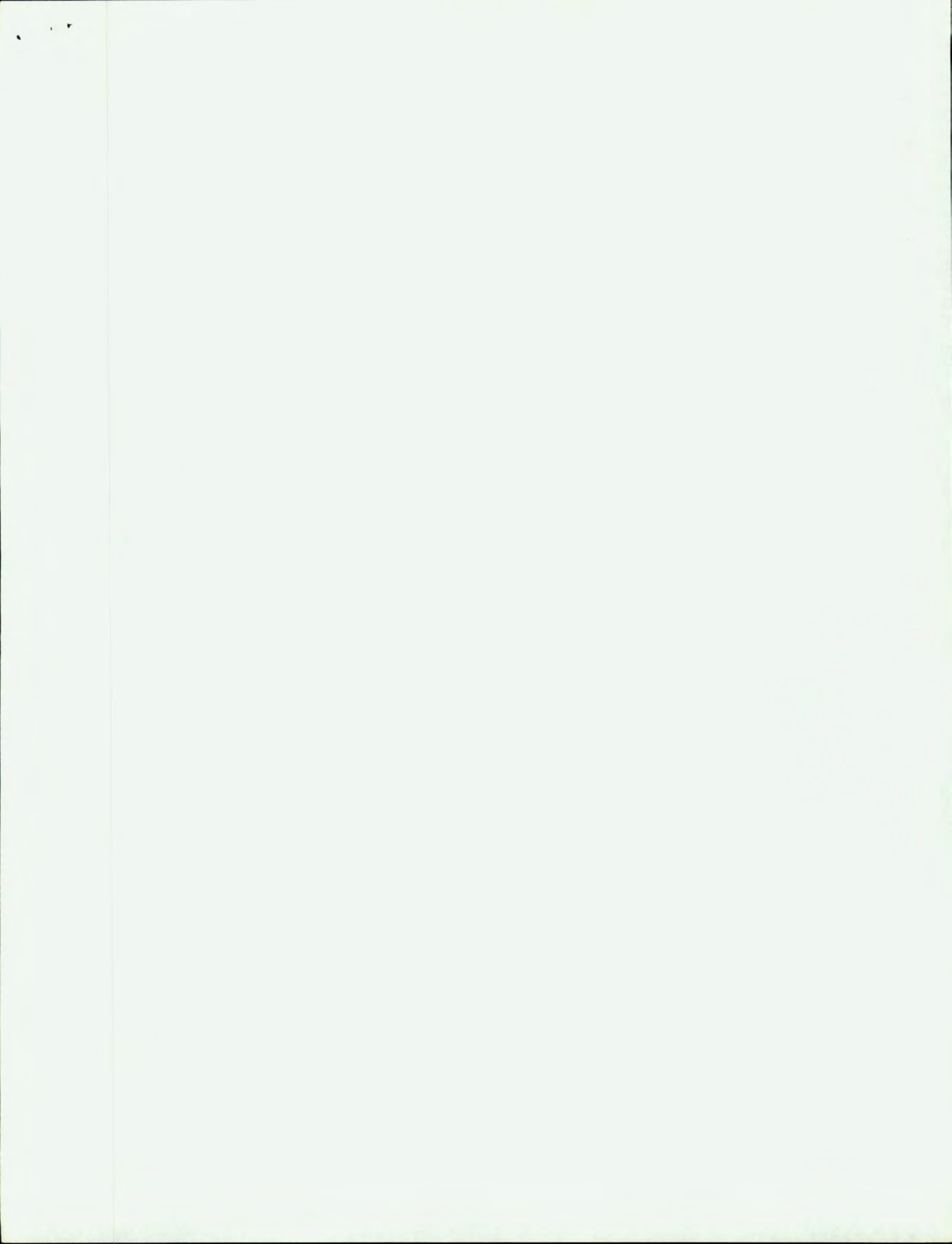
Composition of Study Team

The team will comprise a blend of Indonesian and foreign experts covering the following man description:

Sociologist (team leader)	Foreign expert
Land use planning specialist	Local consultant
Legal expert with specialised knowledge of local land tenure system	Local expert
Agronomist with specialised knowledge of agroforestry cropping systems in rain forest zones	Foreign expert
Silvicultural specialist with knowledge of forest management system	Local expert
Economist	Foreign expert

7. Cost Estimates

7.1 More detailed methodology and staffing will be prepared by the consultants when proposals are submitted. The cost of the study may not exceed US\$1 million and proposals will be valuated in terms of the quality of the product which can be delivered at this price. Indicative budget figures were derived on the following basis.



1. Finish tables you have label them

Part 1 - Base tables

Table 1A - The receiving area file

1B - The sending area file

1C - Merge files / families

1980 - 1989

Receiving Areas

Sending Areas

for 1985-1989 data

take % by province x total # moved

1D Merged File x individuals (1C x 4.55)

2 Make an Index File to list tables

3 Make the following tables

Part I Above

Part 2 Impact of Sponsored and Spontaneous

Migration 1980-1989

Table 2A - Base table (Extract 10 Above)

Table 2B - Cumulative Effect of Sponsored

Migration

Table 2C - Cumulative Effect of Sponsored and

Spontaneous Migration / Assuming

2% net spontaneous migration/year

Table 2D " " / Assuming 5% net

Part 3 - Impact of Size of Program in Republic IV and V

Table 3A

Assuming Base Case / Sponsored / ^{for} Mig. Republic IV

and same rate of movement in Republic I

3A(1) - Cumulative Effect of sponsored movement only

3A(2) - Cumulative Effect Assuming 2% Spontaneous Mig.

3A(3) - " " " " 4% Spont. Mig.

Table 3B

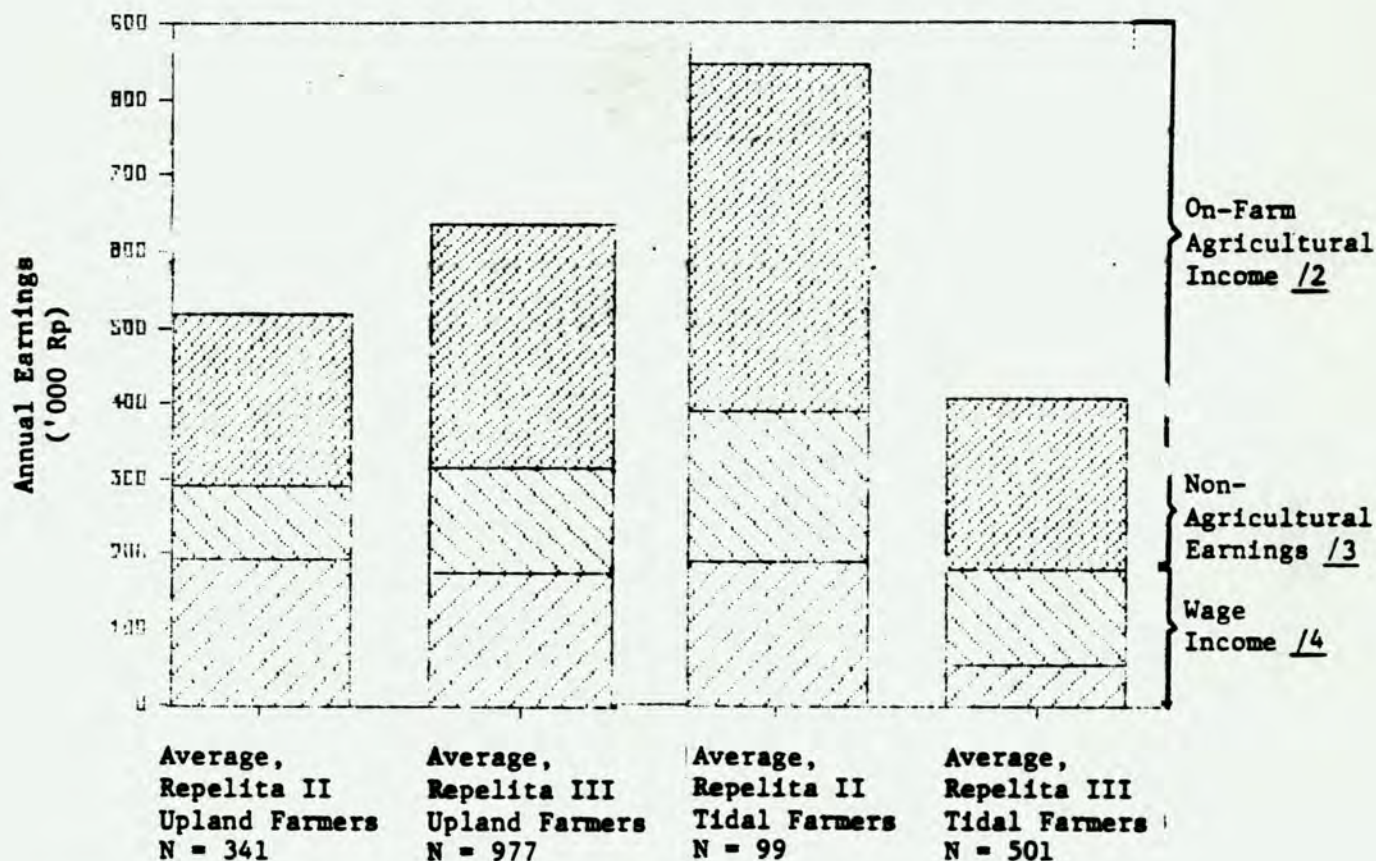
Assuming Base Case for Sponsored Mig. +

D71-4.55
A60-0113
C71
A120-0125

FIGURE .1: SOURCES OF ANNUAL INCOME /1

BY FARM MODEL AND REPELITA

(constant 1985 Rp '000)



/1 Excludes transfer payments.

/2 Income from food crops, tree crops, livestock, includes value of own consumption.

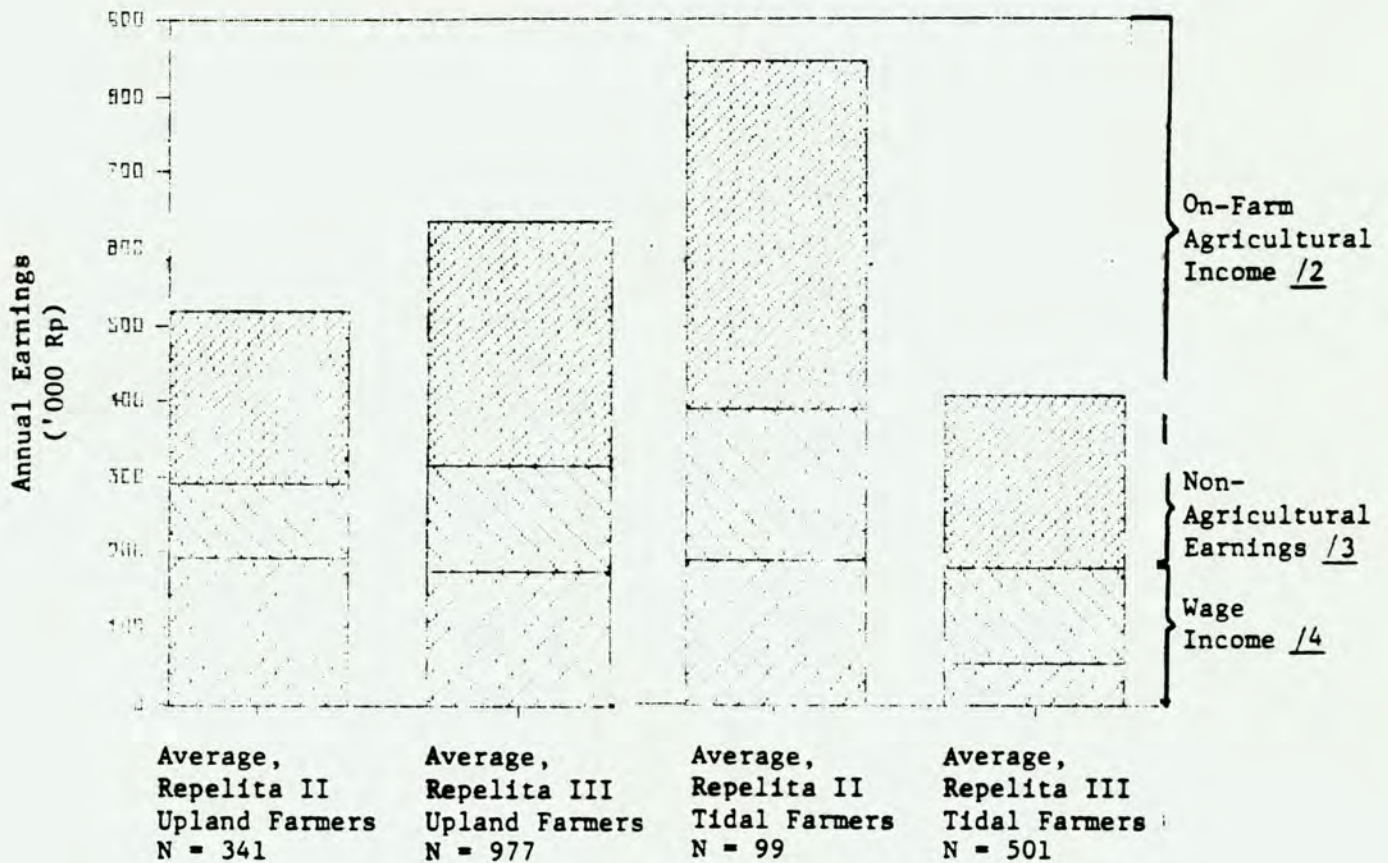
/3 Excludes wage income and transfer payments.

/4 Agricultural or non-agricultural wage income.

Source: BPS Income Survey of Transmigration Areas, 1985.

FIGURE .1: SOURCES OF ANNUAL INCOME /1

BY FARM MODEL AND REPELITA
(constant 1985 Rp '000)



/1 Excludes transfer payments.

/2 Income from food crops, tree crops, livestock, includes value of own consumption.

/3 Excludes wage income and transfer payments.

/4 Agricultural or non-agricultural wage income.

Source: BPS Income Survey of Transmigration Areas, 1985.

IV. THE IMPACT OF TRANSMIGRATION

A. Employment Generation

4.01 Without migration, the labor force of Java and Bali would increase by about one million individuals per year over the next few years. Therefore, finding adequate employment for new job seekers is among the most important challenges facing the GOI. In the past decade, the Government has generated employment by expanding areas under production and intensifying production on cultivated land, by supporting large-scale, labor-intensive rural works programs and by encouraging resettlement. With resource constraints, the growth of temporary employment through rural works programs, is expected to slow and the need for employment creation will be increasingly critical. For this reason, it is important to understand the amount, type and cost of employment generated by transmigration. The following section provides a methodology for assessing the amount of employment resulting from transmigration in Repelita III, and it evaluates the role of the program in employment generation.

Definitions

4.02 The transmigration program generates both temporary and permanent employment. Temporary employment is produced in the development phase of a transmigration site, but is not sustained over time. Most of this employment is from land clearing and the construction of roads and houses. Permanent employment persists after the development phase and includes sustainable jobs in agricultural processing and services in the transmigration sites. Indirect permanent jobs are also produced in transportation, marketing, social services, and the supply of inputs to transmigrants. Local residents benefit from the transmigration program through indirect employment, particularly in trade and transport; spontaneous migrants who move to an area for the opportunities created by transmigration investment also benefit from indirect employment.

Assumptions Used in Calculating Temporary Employment

4.03 The development phase of transmigration creates a large demand for labor to clear land, construct houses, buildings and roads, build drainage systems, and plant tree crops. Labor inputs for land clearing, which is one of the major employment activities, are shown in Table 4.1 and described below.

- (a) Tidal Sites. In tidal sites, land clearing is generally done with chain saws and manual labor, since the soil cannot support heavy machinery. Construction of the main drainage works is capital-intensive, while the construction of tertiary canals by the transmigrants is labor-intensive. In South Sumatra, where many transmigration tidal sites are located, contractors often mobilize labor from West Java for land clearing and construction.

Table 4.1: LABOR INPUTS FOR LAND CLEARING BY FARM MODEL

Farm model	Man-days/ha	ha/household	Man-years/household /a
Tidal sites	80	1.5	0.42
Upland food crops			
Mechanical	30 to 35 /b	1.5	0.16 to 0.18
Semi-mechanical	60 to 70 /b	1.5	0.32 to 0.37
Tree crops	65 /c	2.0	0.45

/a Assuming one man-year equals 286 man-days.

/b Varies depending upon the type of vegetation prior to clearing (secondary forest, grassland, etc.).

/c Average of labor required for secondary forest, bush/grassland and grassland.

(b) Upland Food Crop Sites. Semi-mechanical methods (using chain saws and hand labor) were generally used to clear upland transmigration sites until the beginning of Repelita III when the program shifted mainly to the use of mechanical methods. However, there are both agronomic and employment factors which argue for a return to semi-mechanical land clearing. Aside from preservation of the topsoil, the major advantage to semi-mechanical methods is employment generation. While mechanical methods use 30 to 35 man-days/ha, semi-mechanical methods use about twice this much, or about 250 more man-years per site (assuming 1,500 households per site).

(c) Tree Crops. Labor demand from the development phase of tree crop schemes for transmigrants is the heaviest of all the farm models discussed. Not only must land be cleared for both food crops and tree crops, but roads and houses must be constructed, a cover crop planted, and tree crops established and maintained. Land clearing is generally done using semi-mechanized methods, because the area does not need to be completely cleared and semi-mechanical clearing is cheaper.

Assuming that the nonquantified labor inputs for roads, houses and buildings are roughly comparable across farm models, tree crop investment generates the most labor during the development period. Tidal sites are next, with semi-mechanized land clearing in upland food crop sites close behind. Mechanical land clearing on upland sites has considerably less employment impact.

Assumptions Used in Calculating Permanent Employment

4.04 Permanent Agricultural Employment. Permanent employment consists of both direct and indirect employment generated by transmigration. Labor requirements for food crop agriculture are estimated in Chapter III (see Annex 3, Tables 3 to 11). In the most commonly occurring model, the low-input,

upland model, farm labor requirements stabilize at 160 days/year, the amount necessary to meet subsistence needs. Thereafter, the household is assumed to pursue more remunerative off-farm employment. Assuming full employment is 286 days of work per person per year, then 0.6 agricultural jobs are generated from settling one household under the upland model. Tidal sites follow roughly the same pattern, although, on average, settlers are more fully employed with agriculture on these sites. As Table 4.2 indicates, of the three tree crop commodities, rubber employs the settler the most fully (0.94 man-years per household per year), followed by oil palm (0.64 man-years) and hybrid coconut (0.58 man-years). Thus oil palm, coconut, and food crop models all employ the settler at about the same level, roughly 0.6 man-years/year.

Table 4.2: TREE CROP LABOR REQUIREMENTS FOR LAND CLEARING, DEVELOPMENT, AND MAINTENANCE AND HARVESTING /a

	Commodity		
	Rubber	Oil palm	Hybrid coconuts
Development phase			
Development period	6 man-years	4 man-years	6 man-years
Land clearing /b	65 man-days/ha	65 man-days/ha	65 man-days/ha
Tree crop establishment	479 man-days/ha	426 man-days/ha	447 man-days/ha
Total, man-years per household /c	3.8 man-years	3.4 man-years	3.6 man-years
Maintenance and harvesting	0.94 man-years per household	0.64 man-years per household	0.58 man-years per household

/a Excludes settlement infrastructure.

/b Average for secondary forest, bush/grassland and grassland.

/c Two hectares per household, 286 man-days per man-year.

Source: "Indonesia - The Major Tree Crops: A Sector Review," April 15, 1985.

4.05 Permanent Off-Farm Employment. It is more difficult to calculate how much off-farm work is permanent and not related to the settlement process. As in rural Java, productive activities in transmigration sites are highly diversified. In rural areas of Indonesia, in general, nonagricultural economic activities made up at least 33% of employment in 1980.^{1/} Among the most important sources of employment generation in rural areas in Java are timber milling, plywood industries, rice mills, brick and tile making, cottage

1/ BPS, 1980 Census. This may underrecord nonagricultural employment as many of those recorded as employed in agriculture also engaged in non-agricultural activities.

industries, food processing, weaving and the production of clothing.^{2/} Survey data indicate that these types of activities are also important sources of employment for transmigrants. Some of this employment is related to felling, cutting, sawing and selling timber from uncleared lands; and if a site is part of an ongoing transmigration development, settlers may also do construction work on transmigration houses, roads and other buildings. Small-scale surveys also report many other activities, with most generated within the settlement itself: carpentry, forging, brick and roof tile production, food processing (tempe and tahu), wickerwork, saw mills, retail shops, market activities and small businesses. Although one would expect the service sector to expand as migrant welfare increases or with the length of time on site, the 1985 BPS Transmigration Income Survey does not show a correlation between agricultural success and the amount of off-farm work, nor does there appear to be a significant relationship between wages and length of time on site. This may be due to the interaction of a number of complex factors which hide such associations.

4.06 Figure 4.1 shows the average earnings overall and by farm model from the three sources: wages, nonagricultural activities, and on-farm agriculture, and the implied days worked for wage income. These data are summarized in Table 4.3. The data are shown only for tidal sites and upland food crop sites, tree crops were omitted because of their smaller sample sizes. For the sample overall, settlers work about 130 days per year (0.46 man-years) for wage income, assuming they earn Rp 1,200 per day. This ranged from 46 days of wage labor per year for Repelita III tidal settlers, to 163 days of wage labor per year for Repelita II upland settlers. One might hypothesize that wage opportunities would decline over time if highly dependent on ongoing transmigration development; however, Repelita II and Repelita III upland sites do not differ significantly in the amount of wage income. Repelita II tidal sites have higher wage incomes than Repelita III tidal sites, but this may be because a high proportion (30% of respondents) were located in remote Central Kalimantan (see also Chapter II).

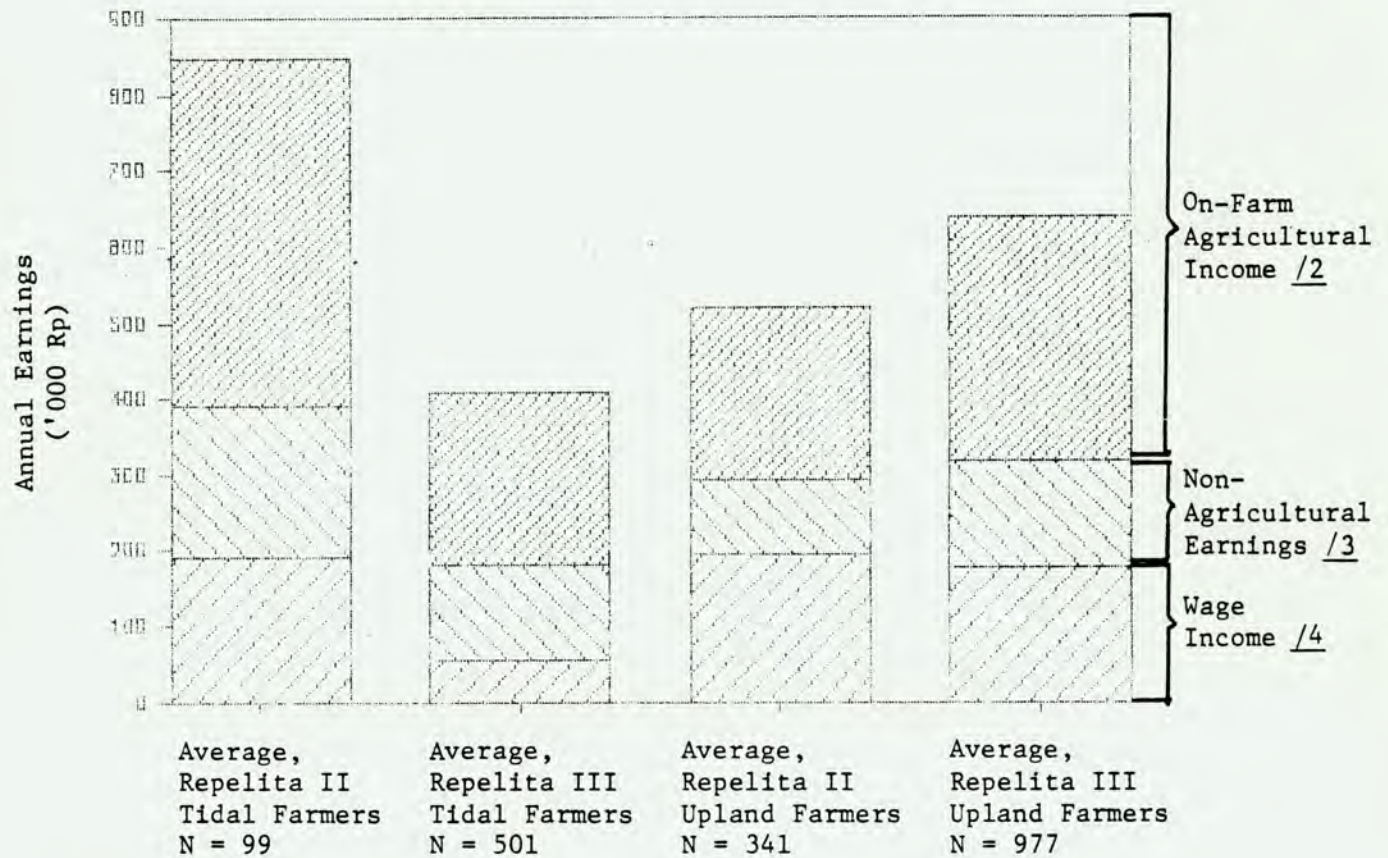
The Amount and Cost of Employment Generated by Transmigration

4.07 If households on average worked 130 days per year (0.46 man-years) for wage income and if they also earn almost as much from other more informal nonagricultural activities, off-farm work would provide households with between 0.7 to 1 man-year of employment per household per year. Adding this to the earlier rough estimate of 0.6 man-years of work in agriculture, transmigration is assumed to generate about 1.3 to 1.6 jobs per household from both on-farm and off-farm activities. This means that the transmigration program generated an estimated 500,000 to 600,000 full-employment, permanent jobs during Repelita III, from the sponsored settlement of about 370,000 households. This figure excludes employment generated indirectly by

^{2/} Gavin W. Jones, "Links between Urbanization and Sectoral Shifts in Employment in Java," Bulletin of Indonesian Economic Studies, Vol. XX, No. 3, December 1984.

FIGURE 4.1: SOURCES OF ANNUAL INCOME /1

BY FARM MODEL AND REPELITA
(constant 1985 Rp '000)



/1 Excludes transfer payments.

/2 Income from food crops, tree crops, livestock, includes value of own consumption.

/3 Excludes wage income and transfer payments.

/4 Agricultural or non-agricultural wage income.

Source: BPS Income Survey of Transmigration Areas, 1985.

Table 4.3: HOUSEHOLD ANNUAL WAGES, ON-FARM AND NONAGRICULTURAL EARNINGS, AND DAYS WORKED OFF-FARM BY FOOD CROP FARM MODEL (Rp'000 1985)

	Sample size	Wages/ <u>a</u> (1)	Nonagri-cultural earnings (2)	Total (1)+(2)	On-farm income (3)	Total income / <u>b</u> (1)+(2)+(3)
----- Rp'000 -----						
<u>Income</u>						
Tidal Sites						
Rep. II	99	190	200	390	460	849
Rep. III	501	55	124	179	228	407
Average	600	78	136	214	266	480
Upland sites						
Rep. II	341	196	98	294	225	519
Rep. III	977	178	141	319	319	638
Average	1,318	182	130	312	295	607
Average / <u>c</u>	1,918	156	128	284	295	579
----- Days -----						
<u>Implied Labor Days /<u>d</u></u>						
Tidal Sites						
Rep. II	158	167	325	-	-	-
Rep. III	46	103	149	-	-	-
Average	65	114	178	-	-	-
Upland sites						
Rep. II	163	82	245	-	-	-
Rep. III	148	117	266	-	-	-
Average	152	108	260	-	-	-
Average, Total	130	107	237	-	-	-

/a All wages from both agricultural and nonagricultural activities.

/b Excludes transfer payments such as money sent from relatives, pensions and government assistance.

/c Excludes 60 respondents settled just prior to the survey date.

/d Days of labor implied at a daily wage rate of Rp 1,200.

Source: BPS Transmigration Income Survey, 1985.

transmigration for local residents and spontaneous migrants. Data on temporary employment suggest that about 18 million days or 63,000 years of full-time employment were generated by land clearing alone.

4.08 At a cost of US\$5,310 ^{3/} per household for the upland food crop model, transmigration would generate employment at about US\$3,300 to US\$4,100 per permanent job. For tidal sites, with settlement costs of US\$7,150 per household, this would be about US\$4,500 to US\$5,500 per job created. Less information is available about the off-farm work of tree crop settlers, but assuming they have roughly the same off-farm employment, then it would cost about US\$3,600 to US\$4,200 to create a job in tree crops. (These estimates are so rough that no significant differences in job creation costs between models can be inferred.) This analysis does not take into account permanent work found by spontaneous migrants who move at a lower cost. The cost of transmigration-related job creation is considerably lower than the cost of job creation in the industrial sector (estimated at US\$10,000-US\$20,000/job), but more than the cost of job creation in service industries.

4.09 Interpretation of these figures must be qualified for several reasons:

- (a) we cannot be absolutely certain how much off-farm employment is dependent upon short-term transmigration program development expenditures (e.g., construction of settlers' houses) and might not therefore be sustained;
- (b) both the quality and quantity of work are important. Low value-added jobs contribute little to productivity and income levels, while better jobs with better incomes indirectly generate growth and further employment;
- (c) to calculate net employment generated, some account must be made of the jobs foregone when a family is moved from Java.

In spite of these caveats, there can be no doubt that transmigration was a major vehicle for employment generation in Repelita III; and no Government investment program other than tree crop development is believed to have generated more self-sustaining, full-time employment in the third five-year plan.

4.10 Future Prospects. In some receiving provinces, government expenditures associated with transmigration will be reduced, either because the area is settled and the process moves on, or because of the overall cuts in government expenditures that will be required given current resource constraints. In many of these provinces, sources of economic growth and labor

^{3/} 1986 US dollars, base case. More remote site development is estimated to cost 25% to 50% more.

absorption exogenous to the transmigration program are also sluggish, given the prolonged fall in the world demand for exports from the outer islands.

4.11 If nonagricultural work should decline in transmigration sites because of reductions in transmigration expenditures, migrants will go farther afield searching for work. Under these circumstances the potential exists for increased competition for employment and downward pressure on wages in the receiving provinces. To avoid this scenario it is critical that reasonable levels of government expenditure be maintained in the outer islands in areas where the labor force has been greatly increased from transmigration in Repelita III. The best ways of doing this are to support infrastructure maintenance to invest in second-stage development in existing transmigration areas, and to use, wherever possible, labor-intensive forms of development.

B. Demographic Impact

The Impact of Sponsored Migration

4.12 The distribution of transmigrants relative to the distribution of people in the outer islands is shown in Annex 4, Table 1. It is noteworthy that over Repelita I and II (1969-79), the major islands received about the same proportion of transmigrants as their share of the total population. Approximately 60% of all transmigrants were sent to Sumatra, slightly more than Sumatra's 55% share of the outer island population, and Kalimantan and Sulawesi received approximately the same share of transmigrants as their share in the outer island population. This is apparently related more to accessibility, carrying capacity, and the availability of infrastructure and services than to conscious design. Since 1980, Kalimantan and Irian Jaya have received a somewhat greater share of transmigrants than before. Kalimantan, which accounted for 14% of all transmigrants in the 1970s, increased its share to 22% during the Repelita III and early Repelita IV period, while Irian Jaya increased its share from 1% in the 1970s to 4% of transmigrants in the 1980s.

4.13 Table 4.4 shows the number of sponsored transmigrants in relation to provincial populations. Although the number of transmigrants more than doubled during Repelita III in 9 of 18 receiving provinces, the share of sponsored transmigrants in provincial populations was no higher than 12% in any province, and in most cases it was under 8%. The highest proportions of sponsored migrants were found in southern Sumatra, in the sparsely populated province of Central Kalimantan, and the smaller provinces of Central and Southeast Sulawesi. The more densely populated provinces of North Sumatra and South Sulawesi show low proportions of recent migrants, but they were major receiving areas in the prewar period. The eastern islands have not been a prime target for transmigration. By 1985, about 20,000 transmigrant families had been settled in Irian Jaya, a province of about 1.3 million, and about 200 families had been settled in East Timor.

4.14 At the district (kabupaten) level the effect of transmigration is more apparent. Annex 4, Table 2 shows the number of sponsored transmigrants settling in outer island kabupaten from approximately 1970 to mid-1985, and at this level the impact is striking. Two kabupaten in Lampung and South Sumatra each absorbed more than 200,000 sponsored transmigrants, and together they

Table 4.4: SPONSORED TRANSMIGRANTS AS PERCENT OF RECEIVING PROVINCE POPULATIONS

Province	Number of sponsored transmigrants ('000)		Sponsored transmigrants as % of provincial population/a		Sponsored transmigrants as % of population increase	
	1971-80/b	1980-85/c	1980	1985/d	1971-80	1980-85
Aceh	9.6	61.0	0	2	2	6
N. Sumatra	1.8	37.1	0	0	0	3
W. Sumatra	34.8	23.2	1	2	6	6
Riau	29.3	177.9	1	8	6	52
Jambi	96.0	107.8	7	12	22	35
Bengkulu	41.7	61.1	5	11	17	34
S. Sumatra	141.3	379.0	3	10	12	48
Lampung	133.3	188.2	3	5	7	13
<u>Sumatra</u>	<u>487.8</u>	<u>1,035.3</u>	<u>2</u>	<u>5</u>	<u>7</u>	<u>21</u>
W. Kalimantan	23.7	131.9	1	6	5	46
C. Kalimantan	9.4	109.8	1	11	4	65
S. Kalimantan	41.0	91.4	2	6	11	41
E. Kalimantan	29.6	55.5	2	5	6	14
<u>Kalimantan</u>	<u>103.7</u>	<u>388.6</u>	<u>2</u>	<u>6</u>	<u>7</u>	<u>37</u>
N. Sulawesi	11.2	18.8	1	1	3	8
C. Sulawesi	51.5	75.5	4	8	14	29
S. Sulawesi	36.5	25.0	1	1	4	5
S.E. Sulawesi	37.9	92.1	4	12	17	62
<u>Sulawesi</u>	<u>137.1</u>	<u>211.4</u>	<u>1</u>	<u>3</u>	<u>7</u>	<u>19</u>
Maluku	4.3	35.1	0	2	1	17
Irian Jaya	10.6	75.6	1	6	4	48
Other/e	n.a.	7.9	n.a.	n.a.	n.a.	2
<u>Total</u>	<u>743.5</u>	<u>1,753.9</u>	<u>1</u>	<u>4</u>	<u>7</u>	<u>25</u>

/a Source for data on provincial population -- BPS, Statistik Indonesia 1984, Table 3.1.2; data on households from 1983 Agricultural Census.

/b P. Gardner, Provincial Population Projections (Jakarta: UNCHS/GOI NUDS Project, 1985), Table 4.

/c Transmigration Department, Daftar Proyek Transmigrasi Yang Dibina Tahun 1985/86 (to August 1985).

/d 1980 figures include migrants moved from 1971-80 and 1985 figures include migrants moved from 1971-85.

/e Nusa Tenggara Barat (NTB), Nusa Tenggara Timur (NTT) and East Timor.

accounted for one quarter of all the transmigrants moved in Repelita III. In each of seven other kabupaten, more than 45,000 transmigrants arrived within the five-year period. These 9 out of 66 receiving kabupaten absorbed 53% of all transmigrants. Almost three-quarters of all transmigrants were accommodated in 20 kabupaten. Sponsored transmigrants equaled slightly more than 40% of the total population in two kabupaten in 1985 (one each in South Sumatra and South Kalimantan) and in seven others they equaled more than 20% of the population. With such high concentrations of migrants, the impact of transmigration on people, production and administrative services is significant in these districts.

The Impact of Spontaneous Movement

4.15 It is difficult to estimate the rate of spontaneous migration in Indonesia since these migrants did not register in the past, but the 1980 census contained two types of questions which touched upon the scale of spontaneous movement: the first was on previous residence, the second on mother tongue. The data on prior residence (Annex 4, Table 3) indicate that in 1980 there were about 3.6 million people born in Java but living in the outer islands, while there were about 1.1 million people living in Java, but born elsewhere. This suggests a lifetime out-migration rate from Java over three times as great as the rate of in-migration. In the five years preceding 1980, about 1.1 million people moved out of Java and about 420,000 moved in, for an out-migration ratio of 2.6 to 1. Of those moving out of Java, 868,000 (80%) moved to rural areas, while the number of transmigrants in this period was less than 250,000. This means that for each family moved by the transmigration program from 1975 to 1979, at least 2.5 others moved to rural areas in the outer islands in other ways. Causality cannot be inferred directly from these data, but there is a strong association between the provinces to which sponsored migrants have been sent in the past and those to which spontaneous migrants later move. This is particularly true of rural migrants who find it difficult to identify and secure land without the help of family and friends who have previously moved (see Chapter VII).

4.16 Data on place of birth do not convey the full impact of transmigration, however, as the children of migrants born in the outer islands cannot be distinguished from the local population in such records. For this reason the 1980 census asked what language was used in the home. These data, summarized in Table 4.5, indicate that there were 7.3 million people in the outer islands in 1980 who spoke an inner island language (Javanese, Sundanese, Madurese or Balinese). Of these, about 5.2 million (70%) lived in Lampung and North Sumatra, areas receiving transmigrants and plantation labor prior to 1940. Although the data on early movement and return migration are not precise, it is unlikely that more than 2.0 million of the 6.7 million migrants to rural areas are the descendants of transmigrants and plantation laborers. The other 4.7 million people are spontaneous migrants, their descendants, or those moving in the civil service or for other work. This again suggests that total spontaneous movement has occurred at a rate of about 2.4 to 1 over the past 50 years.

Table 4.5: SPONTANEOUS MIGRATION AS MEASURED BY LANGUAGE SPOKEN AT HOME /a

Province	Individuals moved as sponsored migrants from 1950-78 (1)	Projected population in 1980 from sponsored migration during 1950-78 from natural increase (2)	Inner island language speakers enumerated in 1980 census, total (3)	Inner island language speakers enumerated in 1980 census, rural (4)	Rural excess (spontaneous migrants) (4)-(2) (5)	Ratio of rural spontaneous: sponsored migrants (5)/(1) (6)	Percent of inner island language speakers in outer islands due to sponsored migration /b		Total provincial population, 1980		Percent of rural population from sponsored migration (2)/(9) (11)	Percent in rural areas speaking inner island language (4)/(9) (12)
							Rural only (%) (2)/(4) (7)	Total (%) (2)/(3) (8)	Rural only (9)	Total (10)		
Aceh	9,600	10,900	175,300	156,200	145,300	15.0	7	6	2,377,000	2,610,500	0	7
N. Sumatra	15,600	26,400	1,767,700	1,668,600	1,642,100	104.6	2	1	6,223,500	8,350,900	0	27
Riau	16,500	22,700	189,500	148,200	125,400	7.6	15	12	1,575,600	3,406,100	1	9
W. Sumatra	35,900	48,200	56,100	52,700	4,400	0.1	92	86	2,973,000	2,163,800	2	2
Jambi	70,700	82,700	255,300	236,200	153,400	2.2	35	32	1,261,600	1,444,400	7	19
Bengkulu	30,600	37,200	134,900	132,200	94,900	3.1	28	28	695,500	767,900	5	19
S. Sumatra	262,400	430,100	635,000	585,700	155,600	0.6	73	68	3,360,700	4,627,700	13	17
Lampung	222,700	350,400	3,400,800	3,163,100	2,812,600	12.6	11	10	4,047,300	4,624,200	9	78
Subtotal Sumatra	664,500	1,009,000	6,615,000	6,143,100	5,134,100	7.7	16	15	22,514,500	27,995,900	4	27
W. Kalimantan	32,600	43,200	197,600	153,400	110,200	3.4	28	22	2,067,900	2,484,900	2	7
C. Kalimantan	14,500	20,000	62,900	35,900	15,900	1.1	56	32	855,900	954,100	2	4
S. Kalimantan	50,100	70,200	115,700	97,300	27,000	0.5	72	61	1,622,300	2,063,200	4	6
E. Kalimantan	41,200	59,300	126,200	62,200	2,900	0.1	95	47	729,300	1,214,600	8	9
Subtotal Kalimantan	138,600	192,800	502,500	348,900	156,100	1.1	55	38	5,275,500	6,716,900	4	7
N. Sulawesi	17,700	25,500	31,000	29,900	4,300	0.2	85	82	1,760,200	2,114,800	1	2
C. Sulawesi	42,200	54,900	53,600	51,100	(3,800)	-0.1	107	102	4,963,400	6,059,500	1	1
S. Sulawesi	55,400	68,300	71,600	70,900	2,500	0.0	96	95	1,169,000	1,284,500	6	6
S.E. Sulawesi	31,600	39,400	46,000	45,100	5,600	0.2	87	86	853,500	941,400	5	5
Subtotal Sulawesi /c	147,100	188,200	202,200	197,000	8,700	0.1	96	93	8,746,300	10,400,300	2	2
East Nusa Tenggara	2,100	2,400	3,200	700	(1,600)	-0.8	324	74	2,531,500	2,736,900	0	0
Maluku	4,200	7,100	16,300	15,900	8,700	2.1	45	44	1,255,500	1,408,400	1	1
Irian Jaya	4,800	6,600	4,400	800	(5,800)	-1.2	799	150	869,900	1,107,200	1	0
Total	961,400	1,406,300	7,343,700	6,706,600	5,300,300	5.5	21	19	41,193,400	50,365,900	3	16
Excluding N. Sumatra, Lampung, & Irian Jaya /d	718,100	1,022,700	2,170,700	1,874,100	851,300	1.2	55	47	30,052,600	36,283,400	3	6

/a Inner island language speakers include those speaking Javanese, Sundanese, Madurese and Balinese.

/b Including offspring of sponsored migrants.

/c In Sulawesi, many spontaneous migrants have registered as sponsored.

/d Excluding North Sumatra and Lampung because of large migrant communities settled there prior to World War II. Excluding Irian Jaya because of apparently sizeable census undercounts.

Source: 1980 Indonesian census and MOT records.

4.17 If we eliminate Lampung and North Sumatra from the analysis, to exclude the "pull" influence of those moved in the colonial period, transmigrants moved to other provinces between 1950 and 1979 plus their descendants would have numbered about one million in the 1980 census, had no one returned to Java. The 1980 census, however, records nearly 2.2 million inner island language speakers in these other provinces, of whom 1.9 million are in rural areas. This suggests a pulling power of at least one family for each family moved in the last 30 years. This number is significantly lower than the figures which include Lampung and North Sumatra since (a) Lampung is the most accessible area to Java and has attracted the vast majority of spontaneous migrants; and (b) the majority of sponsored migrants to other areas have moved in the last decade and have had less time to attract others.

4.18 Thus, while the proportion of migrants in Indonesia is small (over 95% of all Indonesians were on the island of their birth in 1980), the mobile people in the population have had a large impact on the provinces to which they move. Overall, in 1980, inner island speakers made up 27% of the rural population of Sumatra, 7% of Kalimantan and 2% of Sulawesi. In rural areas, about 78% of the people in Lampung spoke an inner island language, 27% in North Sumatra, 19% in Jambi and Bengkulu, and 17% in South Sumatra.

Demographic Impact of the Program through the Year 2020

4.19 Sponsored transmigration in Repelita III represented an estimated movement of about 2% of the combined population of the provinces of Java and Bali and about 15% of the incremental population increase between 1980-85. However, these figures understate the impact of the transmigration program, since they cover a very short period and do not take into account the cumulative impact of moving young couples with the highest fertility levels. They also exclude the effect of spontaneous migrants who follow sponsored settlers.

4.20 In order to assess the longer-range demographic impact of transmigration, Bank staff developed several scenarios based on alternative assumptions about the level of sponsored migration between 1980-2000.^{4/} The high scenario, calculated prior to recent budget constraints, projected Repelita III levels of movement (300,000 families) in each of the third, fourth and fifth five-year plans, declining to about 240,000 families in Repelita VI. This would entail the movement of about 3.3 million people through the year 2000. These figures, while unlikely given current financial constraints, represent the maximum level which could be achieved under the sponsored program if land availability issues were resolved, implementation capacity in the tree crop subsector were significantly improved (see Chapters VI and VII) and financial resources were available. The intermediate scenario assumes that settlement will fall to 200,000 families in Repelita IV and V and taper off to 100,000 families in Repelita VI, ending thereafter. This would entail the sponsored movement of about 1.9 million people through the year 2000.

^{4/} Assumptions of projected fertility and mortality rates for the inner and outer islands, labor force participation rates, and spontaneous migration are detailed in Annex 8.

This scenario is thought to be more realistic. In both scenarios population projections were run on sponsored settlement alone and with two levels of spontaneous movement: the first would result in 88 spontaneous migrants over 20 years for every 100 moved on the sponsored program; the second would result in 181 spontaneous migrants for each 100 moved. This is thought to represent a reasonable range of spontaneous movement where sponsored settlement levels are high.

4.21 The results of this exercise are summarized in Table 4.6. In the absence of any redistribution, the population of the inner islands is expected to reach nearly 170 million by the year 2020 compared to 107 million today. Under the lower scenario for sponsored migration, and with high but historically observed levels of spontaneous migration, the population of Java would be reduced by 15 million (9%) of what it would otherwise be in the year 2020, and transmigration would absorb 19% of the incremental labor force in Java. With the lower ratio of spontaneous migration, transmigration would still absorb 12% of the incremental labor force and the population of Java would be reduced by 10 million.

4.22 These figures highlight two important points. First, intermediate rates of sponsored and spontaneous migration sustained through the year 2000 (with a reduction in Repelita VI) would have a significant impact on population growth and labor absorption in Java. A transmigration program at these levels would have a flattening effect on the growth rate of Java, reducing it from an average of 1.7% to 1.4% p.a. over the period 1980 to 2000. Second, this level of movement would also have a significant impact on the outer islands, increasing the growth rate from 2.3% to 2.8% per year. By extension, the impact of transmigration on regional development to date is critical to an evaluation of the future program. If change brought about by transmigration can be managed to create employment and benefit the outer island peoples without jeopardizing their institutions and resources, this would be a considerable vindication of the proposed program.

C. Impact on the Regions

4.23 The acceleration of the transmigration program during Repelita III (1979/80-1983/84) and the very large numbers of people moved to the outer islands during this period changed the view that transmigration could only make a marginal contribution to regional development. During Repelita III the estimated movement of between 1.5 to 2 million people not only added substantially to local populations in receiving areas, but also brought unprecedented increases in land clearing, road construction, public services, and financial resources. In addition, recent studies showing that many transmigrants are regularly involved in agricultural wage work and nonagricultural employment outside transmigration sites indicate that transmigrants are potentially filling, and perhaps generating, local demands for production and employment in receiving provinces. This section discusses the impact of transmigration on regional resources--people, land, production, infrastructure, and institutions--in order to evaluate the nonquantified costs and benefits of transmigration, and to assess the role of transmigration in regional development. The impact of transmigration on local people and the environment is described in Chapter V.

Table 4.6: DEMOGRAPHIC IMPACT OF TRANSMIGRATION
UNDER ALTERNATIVE SCENARIOS
('000 people)

	Population year 2020	Difference with and without migration year 2020	Population in 2020 as a proportion of population without migration	Annual population growth rate 1980-2020 ----- (%)	Change in incremental labor force -----
<u>No Migration</u>					
Inner islands	169,136	-	-	1.4	-
Outer islands	106,753	-	-	1.9	-
<u>Current Levels of Sponsored Settlement /a</u>					
<u>Inner Islands</u>					
Sponsored only	161,526	-7,610	0.96	1.3	-8
Low spontaneous	155,361	-13,775	0.92	1.2	-16
High spontaneous	147,594	-21,542	0.87	1.1	-24
<u>Outer Islands</u>					
Sponsored only	115,006	8,253	1.08	2.1	10
Low spontaneous	121,453	14,700	1.14	2.2	22
High spontaneous	129,455	22,702	1.21	2.4	34
<u>Intermediate Levels of Sponsored Settlement /b</u>					
<u>Inner Islands</u>					
Sponsored only	163,857	-5,279	0.97	1.3	-7
Low spontaneous	159,566	-9,570	0.94	1.3	-12
High spontaneous	154,032	-15,104	0.91	1.2	-19
<u>Outer Islands</u>					
Sponsored only	112,530	5,777	1.05	2.0	10
Low spontaneous	117,043	10,290	1.10	2.1	18
High spontaneous	122,764	16,011	1.15	2.4	27

/a Assumes sponsored movement of 300,000 families in Repelita IV and V, falling to 240,000 families in Repelita VI.

/b Assumes sponsored transmigration levels of 200,000 families in Repelita IV and V, falling to 100,000 in Repelita VI.

Note: Low spontaneous means that each mover attracts 0.5 people; high spontaneous, each mover attracts 0.75 people within ten years. Assumptions of projected fertility and mortality rates for the inner and outer islands, labor force participation rates, and spontaneous migration are detailed in Annex 8.

Transmigration Expenditures in the Receiving Provinces

4.24 Since Repelita III, transmigration has accounted for a large share of the development budgets of many receiving provinces. Table 4.7 shows the distribution of the transmigration development budget across provinces and the share of transmigration in provincial development budgets was large throughout Repelita III. As the table shows, the 1985/86 transmigration budget in 14 of 18 receiving provinces exceeded the total transmigration budget for the respective provinces during 1979 to 1982. While some increase is due to depreciation of the rupiah, the transmigration budget had nevertheless been increasing in real terms through FY85/86, and represented a large share of the total development budget in most outer island provinces.

4.25 Although budgets are not equivalent to expenditures, the contribution of the transmigration program to the provincial budgets is striking. In 8 of the 17 provinces shown in Table 4.7, the FY85/86 transmigration budget provided from one third to almost one half of the total provincial development budget.^{5/} In only four provinces, all with very low numbers of transmigrants, did the proportions fall below 10%. In five outer island provinces (South Sumatra, Bengkulu, Lampung, South Kalimantan and Maluku), transmigration contributed 20% to 30% of the FY85/86 development budget, in four (Riau, Jambi, Central Sulawesi and Southeast Sulawesi) it contributed 30% to 40% and in four other provinces with relatively small indigenous populations (West, Central and East Kalimantan and Irian Jaya) it contributed 40% to 48%.

4.26 It is important to recognize that these expenditures are incremental to other provincial expenditures, that is, in addition to what would otherwise be allocated on a per capita or area basis. For this reason, such expenditures generate considerable employment, both for local people and transmigrants, and are undoubtedly a leading source of growth in many provinces. Everywhere, small towns near transmigration sites appear to be growing at very high rates, attracting both local people and spontaneous migrants to off-farm work. In fact, much of the increase in public resource expenditures in the outer islands can be justified only because of the exceptionally rapid population increases stemming from transmigration. At the same time, as noted in the previous section, concern exists that a rapid curtailing of expenditures in these provinces, either because transmigration moves to other provinces or because of continuing resource constraints, could make these provinces vulnerable to increased unemployment.

^{5/} The development budget includes all line agency expenditures financed through the central government, except for routine expenditures and special presidential programs (INPRES).

Table 4.7: TRANSMIGRATION DEVELOPMENT BUDGETS IN RECEIVING PROVINCES, 1979-82 AND 1985/86 /a

Province	Transmigration development budget		Distribution among receiving provinces /d		Transmigration as % total development budget in province	
	1979-82/b	1985/86/c	1979-82	1985/86	1979-82/b	1985/86/c
	--- (Rp billion) ---		----- (%) -----		----- (%) -----	
Aceh	15,193	16,017	3.3	2.6	11.0	15.0
N. Sumatra	6,659	17,460	1.4	2.8	3.0	8.5
W. Sumatra	5,147	9,016	1.1	1.5	3.0	6.6
Riau	62,956	49,397	13.6	8.1	24.0	35.8
Jambi	28,367	30,275	6.1	4.9	29.0	37.5
S. Sumatra	114,486	60,966	24.7	9.9	44.0	29.8
Bengkulu	16,505	14,472	3.6	2.4	20.0	24.1
Lampung	10,316	30,068	2.2	4.9	9.0	25.7
W. Kalimantan	29,098	61,781	6.3	10.1	26.0	44.4
C. Kalimantan	22,765	49,084	4.9	8.0	33.0	48.0
S. Kalimantan	39,030	26,695	8.4	4.4	27.0	24.1
E. Kalimantan	26,297	60,046	5.7	9.8	29.0	42.9
N. Sulawesi	7,265	7,519	1.6	1.2	8.0	8.9
C. Sulawesi	20,622	27,111	4.4	4.4	25.0	33.9
S. Sulawesi	6,678	15,582	1.4	2.5	4.0	9.7
S.E. Sulawesi	24,755	26,280	5.3	4.3	37.0	35.7
Maluku	11,634	23,804	2.5	3.9	17.0	25.4
Irian Jaya	16,668	87,699	3.6	14.3	27.0	45.7
<u>Total</u>	<u>464,441</u>	<u>613,272</u>	<u>100.0</u>	<u>100.0</u>	<u>20.0</u>	<u>16.5</u>

/a Recently high carry-overs in transmigration budgets mean that budget figures are higher than actual expenditures (see Chapter VII).

/b Source: UNDP/OPE, Transmigration Program Second Phase Evaluation (Jakarta, 1982), Table 3.9. Figures are totals for three budget years and do not apparently include carry-overs (siap) from previous years.

/c Source: Ministry of Finance, Laporan 1985/86 dari SDPD Bandung. Figures include siap from 1982/83 to 1984/85.

/d Figures do not include amounts allocated to Jakarta or sending provinces.

Land Development

4.27 Table 4.8 shows the distribution of land made available for sponsored transmigrants in the receiving provinces according to official MOT statistics. Consistent with settlement patterns in general, Sumatra accounts for almost 64% of household and farm land allocated under the transmigration

Table 4.8: SPONSORED TRANSMIGRANT LAND BY PROVINCE, 1985

Province	Provincial agricultural land (km ²)/a	Transmigrant land (km ²)/b			Allocated (2) as a % of provincial agricultural land	Sponsored transmigrants as a % of farm households
		Avail-able (1)	Allo-cated (2)	Total in use (3)		
Aceh	10,965	269	173	106	1.6	3.4
N. Sumatra	13,725	148	127	98	0.9	0.7
W. Sumatra	7,713	116	90	90	1.2	1.5
Riau	7,101	801	679	312	9.6	14.1
Jambi	6,626	525	376	330	5.7	11.3
S. Sumatra	10,622	1,740	1,711	1,681	16.1	10.1
Bengkulu	1,527	272	230	168	15.0	15.3
Lampung	7,774	1,018	1,001	563	12.9	7.3
<u>Sumatra</u>	<u>66,053</u>	<u>4,889</u>	<u>4,387</u>	<u>3,348</u>	<u>6.6</u>	<u>6.3</u>
W. Kalimantan	6,831	586	250	109	3.7	7.7
C. Kalimantan	6,479	514	479	265	7.4	17.0
S. Kalimantan	6,223	465	373	253	6.0	7.3
E. Kalimantan	4,841	303	256	197	5.3	13.1
<u>Kalimantan</u>	<u>24,374</u>	<u>1,868</u>	<u>1,358</u>	<u>824</u>	<u>5.6</u>	<u>9.6</u>
N. Sulawesi	3,549	80	66	48	1.9	1.4
C. Sulawesi	63,001	380	300	201	0.5	9.1
S. Sulawesi	15,308	120	115	87	0.7	0.7
S.E. Sulawesi	3,363	387	364	277	10.8	10.8
<u>Sulawesi</u>	<u>85,221</u>	<u>967</u>	<u>845</u>	<u>613</u>	<u>1.0</u>	<u>3.3</u>
Maluku	n.a.	175	149	15	n.a.	4.6
Nusa Tenggara Barat	3,717	45	25	23	0.7	0.4
Irian Jaya	n.a.	337	131	85	n.a.	0.3
E. Timor	n.a.	6	6	2	n.a.	10.3
<u>Total</u>	<u>179,365</u>	<u>8,287</u>	<u>6,901</u>	<u>4,910</u>	<u>3.8</u>	<u>5.8</u>

/a Includes land used for house compounds, gardens, shifting cultivation, and sawah in 1981; excludes pastures, uncultivated swamp, ponds, forested land or unutilized land. BPS, Statistik Indonesia 1984.

/b Land allocated to sponsored migrants moved in Repelita III. Transmigrant land includes only house and field land. Source: Dir. Jen Pengerahan dan Pembinaan, Buku Data Usaha Tani 1985.

program, Kalimantan 20%, and Irian Jaya 2%.^{6/} Of more interest is the relationship between transmigrant land and total land in use in the provinces. In three provinces in Sumatra (South Sumatra, Bengkulu and Lampung) and in Southeast Sulawesi, the amount of land allocated to sponsored transmigrants is over 10% of provincial land used for agriculture. In most cases, however, transmigrants have a larger proportion of farm households than of agricultural land, presumably due to the extensive agricultural practices used by local smallholders in the outer islands. These figures do not take into account land obtained for agricultural purposes by spontaneous migrants.

The Contribution of Transmigration to Regional Agricultural Production

4.28 The contribution of transmigration to regional agricultural production is difficult to assess for several reasons. First, it may take several years for migrants to establish themselves and for production, particularly of tree crops, to stabilize. Second, many transmigrant agricultural systems are upgraded over the years, through the addition of irrigation or tree crops, but there is no way to distinguish the contribution of transmigrants from that of the local population in provincial statistics. Finally, provincial data themselves are rather unreliable, particularly for secondary food crops and tree crops. For this last reason, the following analysis will focus on rice production.

4.29 Table 4.9, which summarizes the recent impact of the Repelita III transmigration program on regional rice production, assumes (a) that 80% of all sponsored migrants produce rice with an average yield of 700 kg/family, (b) that one spontaneous family has already settled in each province (other than the Moluccas and Irian Jaya) for each sponsored family, and (c) that spontaneous families produce rice at the same level as sponsored. Using these assumptions, which are believed to closely approximate the actual situation, the incremental increase in rice production in the outer islands from Repelita III transmigration is estimated at about 240,000 tons per year, about 10% of the increase recorded in the outer islands over the past four years and about 3% of total incremental rice production in Indonesia. These figures, while not insignificant, do not point to Repelita III transmigration as a major factor in recent gains in rice production. This is not surprising in view of the relatively low productivity of food crop sites.

4.30 Transmigration has, however, made a significant contribution to incremental rice production in some provinces. In five provinces, recent transmigrants contributed an estimated 20-30% of incremental rice production: Bengkulu (19%), Jambi (23%), West Kalimantan (25%), South Sumatra (27%) and Riau (30%). In two provinces, their contribution is above 40%: South Kalimantan (45%) and Southeast Sulawesi (49%); while in two sparsely populated provinces lacking traditional irrigated rice, it constitutes a major portion

^{6/} The discrepancy between land available for sponsored transmigration (8,287 km²) and that allocated (6,901 km²) and in use (4,910 km²) is apparently due to the practice of allocating 1.25 ha and retaining much of the land for future development.

Table 4.9: THE CONTRIBUTION OF REPELITA III TRANSMIGRATION TO INCREMENTAL RICE PRODUCTION BY PROVINCE, 1980-1984

Province	Transmigrant families 1979/80- 1982/83	1984 Incremental production /a		1980 Provincial production (⁰ 000)	1984 Provincial production	Incremental Provincial production	Transmigrant contribution --- (%) ---	
		Sponsored (A)	Spons + Spont (B)				(A)	(B)
Aceh	9,625	5.4	10.8	666	876	210	3	5
N. Sumatra	3,534	2.0	4.0	1,595	1,952	357	0	1
W. Sumatra	3,993	2.2	4.5	1,051	1,311	260	1	2
Riau	19,554	11.0	21.9	244	317	73	15	30
Jambi	11,361	6.4	12.7	389	444	55	12	23
S. Sumatra	66,616	37.3	74.6	872	1,147	275	14	27
Bengkulu	8,917	5.0	10.0	174	228	54	9	19
Lampung	6,316	3.5	7.1	686	1,030	334	1	2
<u>Sumatra</u>	<u>129,916</u>	<u>72.8</u>	<u>145.5</u>	<u>5,678</u>	<u>7,305</u>	<u>1,627</u>	<u>4</u>	<u>9</u>
W. Kalimantan	13,297	7.4	14.9	547	606	59	13	25
C. Kalimantan	10,197	5.7	11.4	206	220	14	41	81
S. Kalimantan	15,114	8.5	16.9	735	773	38	22	45
E. Kalimantan	6,759	3.8	7.6	138	144	6	63	-/b
<u>Kalimantan</u>	<u>45,367</u>	<u>25.4</u>	<u>50.8</u>	<u>1,626</u>	<u>1,743</u>	<u>117</u>	<u>22</u>	<u>43</u>
N. Sulawesi	2,991	1.7	3.3	200	291	91	2	4
C. Sulawesi	11,905	6.7	13.3	228	242	14	48	96
S. Sulawesi	2,763	1.5	3.1	1,799	2,406	607	0	0
SE. Sulawesi	13,880	7.8	15.5	59	91	32	24	49
<u>Sulawesi</u>	<u>31,540</u>	<u>17.7</u>	<u>35.3</u>	<u>2,286</u>	<u>3,030</u>	<u>744</u>	<u>-</u>	<u>-</u>
Maluku	5,712	3.2	-	25	22	-3	-	-
Irian Jaya	9,775	5.5	-	3	4.4	1.4	-/b	-
<u>Maluku & I.J.</u>	<u>15,487</u>	<u>8.7</u>	<u>-</u>	<u>28</u>	<u>24.4</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>Total Outer Islands</u>	<u>222,310</u>	<u>125</u>	<u>240</u>	<u>9,618</u>	<u>12,102</u>	<u>2,485</u>	<u>5</u>	<u>10</u>
<u>Total Inner Islands</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>20,032</u>	<u>25,392</u>	<u>5,360</u>	<u>-</u>	<u>-</u>
<u>Total Indonesia</u>	<u>222,310</u>	<u>125</u>	<u>240</u>	<u>29,650</u>	<u>37,494</u>	<u>7,845</u>	<u>2</u>	<u>3</u>

/a Assumptions:

(A) Assumes 80% of all families produce rice at 700 kg/family or 560 kg/family average over all transmigrants.

(B) Assumes ratio of one spontaneous family/sponsored family and production at above rates.

/b Error.

of increases: Central Kalimantan (81%) and Central Sulawesi (96%). In East Kalimantan and Irian Jaya, the very small numbers involved make analysis difficult, but it appears likely that transmigrants account for the entire incremental production (as expected) in these provinces. It should be understood that due to the highly unreliable nature of the figures used, this analysis is meant only as a rough approximation of the contribution of recent transmigrants to rice production.

4.31 When all transmigrants are considered, the impact of the transmigration program on rice production is more impressive. For example, in Lampung where 70% of all residents are of inner island descent, it is reasonable to assume that at least 70% of all incremental production in the last five years (estimated at 334,000 tons) is related to transmigration.^{7/} Assuming that inner island language speakers in the outer islands in 1980 produced the same proportion of rice as their share in the local population, transmigrants would be responsible for the production of 1,775,000 tons of unmilled rice (gabah) or 15% of outer island production. By the same reasoning, transmigrants would be responsible for the production of some 2 million tons of unmilled rice in 1985,^{8/} about 17% of outer island production and 5% of Indonesia's total rice production. Other Bank studies of the contribution of transmigrants to rice production in the outer islands have also estimated about 2 million tons. This is a small but significant contribution to the increase of about 20 million tons in the country's annual production over the last 20 years.

Infrastructure

4.32 One of the most important factors promoting regional development and contributing to the integration of transmigrant activities and the regional economy is the construction and maintenance of roads. An extensive, reliable transportation network is essential to the marketing of agricultural commodities, and to finding off-farm employment and maintaining household incomes. Data are not available for the total number and length of roads built under the auspices of transmigration programs since Repelita I, but since a majority of migrants were sent to the outer islands in Repelita III, the figures in Table 4.10 are highly indicative of the overall distribution of roads. As the table shows, between 1981 and 1985 about 4,200 km of new access roads, 7,700 km of new main roads and 14,000 km of village roads were constructed under the transmigration program, increasing provincial totals by an average of 20%. This is a significant achievement, and it lays the groundwork for economic development in many areas where it would not have been possible before.

^{7/} While transmigrants have lower yields than local people due to their location on more marginal soils, virtually all transmigrants grow rice while many local people, particularly in Sumatra, concentrate on cash crops.

^{8/} About 1,800,000 tons (15% of total outer island production) plus 240,000 tons from Repelita III migrants.

Table 4.10: TRANSMIGRATION ROAD CONSTRUCTION IN RELATION TO LOCAL INFRASTRUCTURE

Province	Provincial Road Network			Repelita III Transmigration roads /a			Total Repelita III Transmigration roads		Repelita III Transmigration roads as % of local roads			% Total transmigration roads per province
	Total (1)	National/provincial (2)	Kabupaten (3)	Access (4)	Main (5)	Village (6)	(4+5) (4+5)	(4+5+6) (4+5+6)	(4+5) as a % of (3)	(4+5+6) as a % of (3)	(4+5+6) as a % of (1)	
----- (km) -----												
Aceh	9,982	2,906	7,076	118	218	404	336	740	5	10	7	3
North Sumatra	15,132	5,188	9,944	121	223	414	344	758	3	8	5	3
West Sumatra	8,632	2,772	5,860	52	96	178	148	326	3	6	4	1
Riau	7,262	2,344	4,918	364	670	1,240	1,034	2,274	21	46	31	9
Jambi	4,580	2,047	2,533	233	430	796	663	1,459	26	58	32	6
South Sumatra	9,692	3,891	5,801	568	1,051	1,946	1,619	3,565	28	61	37	14
Bengkulu	3,527	1,031	2,496	108	200	370	308	678	12	27	19	3
Lampung	4,596	2,007	2,589	480	884	1,637	1,364	3,001	53	116	65	11
<u>Sumatra</u>	<u>63,403</u>	<u>22,186</u>	<u>41,217</u>	<u>2,044</u>	<u>3,772</u>	<u>6,985</u>	<u>5,816</u>	<u>12,801</u>	<u>14</u>	<u>31</u>	<u>20</u>	<u>49</u>
West Kalimantan	4,182	1,812	2,370	398	737	1,365	1,135	2,500	48	105	60	10
Central Kalimantan	4,355	722	3,633	353	653	1,210	1,006	2,216	28	61	51	8
South Kalimantan	4,119	1,177	2,942	150	277	514	427	941	15	32	23	4
East Kalimantan	3,338	2,550	788	269	497	921	766	1,687	97	214	51	6
<u>Kalimantan</u>	<u>15,994</u>	<u>6,261</u>	<u>9,733</u>	<u>1,170</u>	<u>2,164</u>	<u>4,010</u>	<u>3,334</u>	<u>7,344</u>	<u>34</u>	<u>75</u>	<u>46</u>	<u>28</u>
North Sulawesi	5,627	1,645	3,982	55	101	188	156	344	4	9	6	1
Central Sulawesi	6,309	2,800	3,509	186	344	637	530	1,167	15	33	18	4
South Sulawesi	17,807	3,394	14,413	70	130	240	200	440	1	3	2	2
Southeast Sulawesi	5,012	1,305	3,707	162	299	554	461	1,015	12	27	20	4
<u>Sulawesi</u>	<u>34,755</u>	<u>9,144</u>	<u>25,611</u>	<u>473</u>	<u>874</u>	<u>1,619</u>	<u>1,347</u>	<u>2,966</u>	<u>5</u>	<u>12</u>	<u>9</u>	<u>11</u>
Eastern Islands	10,293	4,465	5,828	129	238	441	367	808	6	14	8	3
Irian Jaya	5,194	643	4,551	361	668	1,227	1,029	2,256	23	50	43	9
<u>E.I and Irian Jaya</u>	<u>15,487</u>	<u>5,108</u>	<u>10,379</u>	<u>490</u>	<u>906</u>	<u>1,668</u>	<u>1,396</u>	<u>3,064</u>	<u>13</u>	<u>30</u>	<u>20</u>	<u>12</u>
<u>Total</u>	<u>129,639</u>	<u>42,699</u>	<u>86,940</u>	<u>4,177</u>	<u>7,716</u>	<u>14,282</u>	<u>11,893</u>	<u>26,175</u>	<u>14</u>	<u>30</u>	<u>20</u>	<u>100</u>

/a Access road at 8.8 m/household; main road at 16.2 m/household; village road at 30 m/household.

Source: Directorate PLP, 1985.

4.33 Table 4.10 also shows the impact of transmigration roads on the road stocks in specific provinces. Because most roads constructed under the transmigration program will eventually become the responsibility of the district (kabupaten) governments, the ratio between transmigration roads and district roads is most important, and indicates the additional burden that will have to be assumed by the districts. Comparing the length of access and main transmigration roads to the length of district roads indicates that the ratio is highest in East Kalimantan where transmigration roads constructed between 1981/82 and 1984/85 are almost equivalent in length to the local district road network. Lampung and West Kalimantan have about half as many transmigration roads as local roads, and in Riau, Jambi, South Sumatra, Central Kalimantan, and Irian Jaya transmigration roads account for 21-28% of local roads.

4.34 The road network established due to the Repelita III program is expected to at least double the infrastructure stocks of the two districts where new transmigrants are equivalent to 40% of the 1980 population and in the seven other districts where they number 20% or more of the 1980 population. The large proportion of transmigration roads in some districts and provinces indicates the need for close coordination between transmigration and provincial public works offices in the design, maintenance and transfer of these roads, and this is emerging as a major issue in Repelita IV.

4.35 The problem has several dimensions. First, transmigration roads are initially designed to low standards and constructed by land clearing contractors who in many cases have little experience in road construction or maintenance. Second, funds were not provided for maintenance while roads were under MOT authority during Repelita III. Thus, when sites are transferred to the provinces, roads are already in very poor condition and their rehabilitation overwhelms the limited financial and technical resources of the district public works offices. To compound the problem, district public works offices, which are generally weak, are particularly weak in those relatively underpopulated districts where transmigration occurs. This strongly indicates the need for an ancillary program to develop public works services in those transmigration receiving districts where the maintenance task will be most demanding and the capacity most limited.

4.36 Another element of this problem is related to the absorption of roads into the provincial and national road networks. National and provincial public works offices have a numbering system for roads under their authority, and funds for maintenance are allocated according to the length and condition of numbered roads. However, there is no automatic system for incorporating transmigration roads into the programs of the relevant public works offices and a lag of several years in incorporating them is not uncommon. The Ministry of Public Works has recently begun an inventory of all transmigration roads constructed in Repelita III, but arrangements have yet to be made for ongoing review and registration prior to transfer.

4.37 A separate problem is that incorporation of some new settlements into regional markets will require an extension of the national road network. For example, in South Sumatra where nearly 400,000 people have been settled in the last five years, major investments in new access routes and/or

a realignment of existing roads will be required to realize the economic potential of new sites, but new construction will be difficult to undertake because of the high capital investment required.^{9/} This suggests that transmigration planning must take a longer perspective and that the full costs of integrating transmigrant communities into the regions must be taken into account in the planning process. More specifically, a mechanism is now urgently required for identifying major road investments needed to support the regional development programs initiated by transmigration and for scheduling new investments. This will be difficult to support in light of budget constraints.

The Impact of Transmigration on Regional Services

4.38 Roads are only one example of the expansion of rural infrastructure and institutions in response to transmigration. Other services which have been greatly expanded include extension, agricultural supply, education and health. During Repelita III, each of the line agencies responsible for these services held their own budgets, and planning and coordination were difficult (see Chapter VIII). In Repelita IV, the budgets for some activities were given to the MOT. Under these arrangements, the coordination of implementation during the development period is expected to improve, but problems in the transfer of such services to the provinces are expected to increase. Therefore, effective hand-over must entail early planning for the number of people to be transferred (extension workers, teachers, health clinic personnel), adequate budget provisions for their salaries, and arrangements for incorporating them into district or provincial services. Problems will also be exacerbated as the number of Repelita III sites to be transferred expands.

4.39 Large-scale transmigrant activities also have a major impact on urban development in their vicinity. Towns, even small ones, in transmigration regions often experience a boom in activity either as a spin-off from construction, the relocation of civil servants and their consumption expenditures, or the search for "informal sector" work by the transmigrants themselves. Many of these towns are growing at rates which, if they continue, will double their populations every ten years. For smaller towns which have no formal urban status and depend exclusively on central government budgetary allocations, rapid increases in road traffic and accelerated growth are difficult to accommodate under current planning arrangements and will continue to be so unless special measures are taken which recognize the impact of transmigration. Indonesian cities also find it difficult to keep pace with

^{9/} The proposed road from Tanjung Karang in Lampung to Palembang is a case in point. This road would pass through an area where some 350,000 transmigrants are settled, provide access to sites such as Pematang Panggang which are almost entirely isolated, and provide a direct link between Java and Palembang (the major city in Sumatra). Both the economic impact and traffic potential of this road are unquestionable, but construction has not yet been initiated, mainly because of resource constraints.

accelerated growth, particularly where the capacity is already low as in the large coastal cities and the small frontier towns in the outer islands.^{10/}

4.40 The point to be made is a simple one. Transmigration on the scale achieved in Repelita III will place large demands on regional services and budgets in Repelita IV. These demands are so great that special arrangements including revised planning and budgeting procedures at the central level and accelerated institutional development at the local level are required. The Government has recognized this point, and is now using its limited resources for maintenance of existing sites, while cutting new development expenditures.

D. Summary and Conclusions

4.41 This chapter illustrates the impact which the transmigration program has had to date on employment generation, demographic trends in the inner and outer islands and on regional development. Data analysis indicates that the transmigration program generated an estimated 500,000 to 600,000 permanent jobs in Repelita III. This is more permanent, self-sustaining employment than in any other government investment sector, other than tree crop development. The cost of creating a permanent job in transmigration is estimated at about US\$4,000 which is higher than the cost of jobs in service sectors, but lower than the cost of creating employment in industry (estimated at US\$10,000-\$20,000 per job). This cost does not take into account benefits derived from temporary employment and spontaneous transmigration.

4.42 At the settlement levels achieved in Repelita III, transmigration absorbed about 12-15% of the new labor force in Java and Bali. If transmigration were sustained at half the levels achieved in Repelita III through the year 2000, and accompanied by spontaneous migration at historically observed levels, it would by the year 2020 have reduced the population of Java by 10% and absorbed about 20% of the incremental labor force. Even with lower rates of spontaneous transmigration, the program would reduce the population by 6% and absorb about 12% of new laborers.

4.43 The data also show that sponsored transmigrants settled during the Repelita III period were equal to as much as 40% of the 1980 population of some kabupaten; that farm land opened for transmigrants was equal to 10% or more of the estimated total area of agricultural land in four provinces; and that rice production by Repelita III migrants, while small in total, was significant in some receiving provinces. Road construction resulting from transmigration was estimated to have almost doubled the length of roads in one province and to have increased the stock of roads by as much as 50% in seven provinces and by 20% overall in receiving provinces. Other services which

^{10/} In the outer islands, only about 30% of the larger urban centers have access to clean water supplies, less than 30% have access to sanitation facilities, and only 25% have any kind of formal garbage collection service.

have been greatly expanded in response to transmigration are health, education and extension.

4.44 These data indicate the very significant impact which transmigration has had on both the inner and the outer islands. They also suggest that the expansion of population, regional infrastructure, and services on this scale require adequate arrangements for the transfer of roads and administrative functions to the provinces and the reallocation of funds from the center to the periphery to increase needed services. Investments should also be channeled to past receiving provinces to maintain employment levels in these areas. This may be difficult in the face of increasing resource constraints.

REDECON

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FUNDAMENTAL RESUME

This report presents the results fo reconnaissance phase of the Counterpart Consultant Minister Transmigration and PT. REDECON Consultant Team to obtain an illustration of main issues and a series of suggestions on policies of the transmigration sector. A great deal of which was intended for a much more increase of capability of the Transmigration Department in carrying out main duties to attain objective of transmigration performance and a series of transmigration program targets in Repelita IV.

As observed by the Counterpart Consultant and PT. REDECON Team, the Dep. Trans. Management is now suddenly confronted with two serious problems, which are:

First, problems related to achievement of quantitative targets in Repelita IV, of numerous extent and other targets related to quality developing of settlement and living standards of the transmigration community.

Second, issues related to an orderly set up of the new Department organization and consolidation of State instruments for a more increased capability in executing today's main duties of the Transmigration Department as a basis for future implementation, especially Repelita IV.

In accordance with TOR, the Counterpart Consultant and PT. REDECON Team, in the first phase of this Study Report, will focus attention upon three problem grouping i.e.:

First, relevant aspects and within organizational scope and management of the Transmigration Department.

Second, human resources and supporting means to execute main duties of the Transmigration Department.

Third, financing problems and utilization of development budget funding mainly the SIAP (unexpended Development Balance) funding in the Transmigration performance.

FUNDAMENTALS AND THE OBJECTIVE OF POLICIES IN THE TRANSMIGRATION SECTOR.

These three grouping of problems mentioned above was then studied by the Counterpart Consultant and PT. REDECON Team by utilizing a macro analysis framework and objective of Government policies development in the transmigration sector and various opportunities and also constraints in future implementation of the transmigration program. The results of above study concluded a summary of main problems and objective of policies as follows :

- First : transmigration as a national program and strategically in the implementation of the program and other national priorities. Both Guidelines of state Policies and Provisions of Law provided a formal basis for performance of transmigration and at the same time provided also limitations of scope of activities and objective of implementation of transmigrations.
- Second : performance of transmigration faced the reality that external factors were heavily influencing and also causing limitations upon scope of activity and objective of implementing transmigration. Development of the external factor such as "commodity-boom" and mainly "oil-boom" sixties to seventies, provided a financial opportunity for the implementation of transmigration on a large scale. However, future prospects especially the implementation of Repelita IV, and the availability of development funding and projected settlement area "ready-for-use", is estimated to be confronted with key constraints in the implementation of transmigration.

- Third : Setting up and implementation of the transmigration program, should be based upon calculating areal lay-out structure, environmental condition, and pattern and objective of regional development so that natural resource potentials (land, water) could be more utilized for social security of the community in the area concerned. Viewing that Sumatra is already entering an era of satiation for food pattern, future plans should be worked out to utilize the central and eastern part of Indonesia for the implementation of transmigration programs.
- Fourth : Carrying out main duties and challenges of the transmigration program are not to be separated from spot-lighting the capability of State instruments, human resources and today's existing means of the Department of Transmigration. However, today's condition and internal problems of the organization should also be visualized in a perspective of institutional development in the past and also in coordination and interaction with other agencies and departments.
- Fifth : Efforts of orderly arranging organization and working method of the Transmigration Department and increasing the capability of cross sectoral coordination are still pressing and need to be adjusted to requirements of implementing main duties and achievement of transmigration targets. Important to encourage self-initiating transmigration, participation of the private sector, and self-efficient community institutions for future implementation of transmigration viewing an increasingly limitation of personnel recruitment, physical supporting means and other governmental resources.

Findings of Counterpart Consultant and PT. REDECON Team. Weak components of the organization: working pattern & personnel formation of Dep. Trans. prior improvement and increase of capability necessary before expanding the organization and also a requirement for increasing inter-departmental coordination. Due to an ever increasing complexity of duties and challenges faced by Dep. Trans. in Repelita IV, necessary to carry out re-orientation of policies in the transmigration sector, included inter-alia adjustment to standards and targets which should be achieved. So, problems of orderly arranging the organization, developing capability of instruments and human resources, and utilization of budget fund available for the transmigration program may now be implemented based upon strategy of selective objectives, whereby whether constraints and opportunity exist are calculated, both internal or external.

Basic findings of the Counterpart Consultant and PT. REDECON Team relevant to the three problem grouping mentioned above.

1. Arrangement of Organization and Management Planning System.

One of the stagnation in performance of the transmigration program :

An existing planning system still unadequate or non-existence of an integrated transmigration development plan. Considering the scope of transmigration activities, which always require an integrated cross-sectoral approach, demand the existence of an accurate planning process, efficiently, and in accordance with required time dimension.

The same with dimension of objective of transmigration as outlined in the Guidelines of State Policies, indicating development level intended to achieve. And also operational targets of Repelita except its extent and exceedingly stressing quantitative targets (the number of total families and such alike), it is also necessary to formulate more selectively and require other norms which would not neglect "settlement standards" and "living standards" of transmigrant and

and the surrounding population.

A more selective policy needed, due to increasingly limitation of development funding, natural resources and also available manpower, to achieve Repelita IV targets. Scale of Priority and Strategy of concentration should be established, clearly and consistently, and all this will be met if there is a reorientation of policies and a proper and adequate planning system.

Fundamental of Organizational Law and Working method of the Department Organization Structure and Working Method of the Transmigration Department still in effect is arranged under KEPMEN (Ministerial Decree) No. 055A/Men/1983 while principles of working mechanism of the Department are arranged under KEPMEN No. 074/Men/1984. Relationship between the two Decrees mentioned need a more detailing and more adjustable to KEPPRES (Presidential Decree) No. 44/1974 and to be related with KEPPRES No. 59/1984 regarding coordination of Transmigration Performance. In this respect, the Counterpart Consultant and PT. REDECON Team concluded that KEPMEN No. 160/MEN/SJ/1984 reference Organizational Perfection Team of the Transmigration Department is an effective step and necessary to strengthen its implementation for immediate improvement of existing shortcomings and weaknesses in above Ministerial Decree.

Main Duties and Organizational formation fo the Department. Prior to becoming a Department, organizational units and structure has been changed frequently, yet no development of an institutional pattern of management and working mechanism, therefore efforts of strengthening the organizational formation and increasing of efficiency and operational capability of the Department, apparently needs to be undertaken in advance prior to executing expansion of instruments and organization of the Transmigration Department.

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Due to a future increase of function & role of the Personnel Education & Training Center and the Research & Development Center, adequate measures should be taken, especially viewing that requirements for increasing human resources in instruments of the Department and also of the transmigrant community in the regions, become more and more important and an ever growing need of those requirements.

Main Duties of Terrace (Essential) officials of the Department.

Ministerial Decree (KEPMEN) No. 074/1984 stated that Directorates General of the Dep. Trans. do not have a vertical (commanding) line to organizational units of the Dep. Trans in the regions. This commanding line, directly connecting units vertically is in the hands of the Minister, and in practice above operational technical competence will be carried out by the Secretariate General, who in practice will take receipt of and process reports from the regions and perform monitoring and evaluation of regional projects.

Partial competence, technically operational at the disposal of the Secretariate General while the Directorate General has only technical competence, is now considered functionally less efficient, while formally above stipulations is also less conformable to provisions of KEPPRES No. 44/1974 and KEPPRES No. 15/1984.

Management system and working method

Generally viewed management system and working method in circles of the Dep. Trans. have still not reached its optimum compared to main duties and challenges to be faced in Repelita IV.

This weakness of management, in principle is a result of the reality that the Deptrans as a newly established Department is still in its process of searching and finding a form of system and pattern of efficient management.

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And even this process of searching an efficient form experienced many difficulties due to a number of factors.

First, due to the existence of some weakness in management system and working method effective for the Dep. Trans., namely KEPMEN No. 074/Men/1984 and also KEPMEN No. 01/Men/1985.

Second, due to an exceeding urge in pursuing quantitative results/targets of Repelita IV and also in pressing down total SIAP so that interests and efforts needed to be exerted for building up a management system and development of an institutional capability of the Dep. Trans. became less.

Third, what is more sectoral crossing (diagonally) characteristics and integrated transmigration activities strive for the availability of sufficient manpower and advanced capability of management.

Fourth, still no adequate monitoring system and evaluation of program implementation and transmigration project.

Inter-departmental Coordination.

The inter-departmental relationship is an outstanding aspect in the implementation of transmigration program due to carrying out main duties of the Dep. Trans. is not only on its own but closely related to performing main duties of some agencies and other Departments. And in this respect, till now in performing transmigration program, conflicts still exist with the implementation of Departments concerned. Conflicts or also obstacles of accelerating inter departmental coordination involve whether planning, program implementation or factor instruments.

A main source of conflicts are the provisions of law, specifically the Constitution arranging main duties of each Department. Another conflict involves issues of land use for several requirements, including for transmigration.

And another one, conflicts derived from perception of function and role of the Dep. Trans. in the national development. Those conflicts indicate that the target of coordinating performance of transmigration should be more adaptable to the objective stipulated in the Guidelines of State Policy (GBHN).

Although such issues of inter-departmental coordination are arranged in KEPPRES No.59 the year 1984, except the non-availability of an implementation manual (Juklak) of above KEPPRES a directive coordination of implementing the transmigration program should also be undertaken to solve those three sources of conflicts.

2. Development of Human Resources

The developmental of Human Resources is a centralized problem, which is now faced by the Dep. Trans. Efforts of solving above problem are not to be separated from arranging the organization and departmental management, and also applicable for the objective of program and selective targets in the reorientation of future policies which are to be followed.

Requirements and Planning of Personnel

Manpower needs assessment necessary for the performance of the transmigration program, and perfection of recruitment system, selection and placement of Dep. Trans. personnel should be more adjusted to requirements of each organizational unit and task/function, and development of future conditional demand. Drafting of a "job description" for each functional position is also a must and an implementation manual for tasks, competence and responsibility of all personnel concerned.

Dep. Trans. should also initiate pioneering of efforts toward manpower planning in building up career, profession and institutional capability needed by the department to ca

rry out main duties.

Education and Training

Except other existing times, through effective programming of education and training Dep. Trans. should not only focus above program on its own circles but also apply to the transmigrant community in regions becoming more extensive.

Apart of what has been achieved, a shortage still exist in volume and capability. Furtherly, organization, instructors, system and curriculum of education and training still needs perfections besides relevant means should be build and upgraded in accordance with an increase of needs. However, most important is the objective and target of education and training should be more detailed in its purpose according to reorientation of new policies to be followed.

Viewing its scope and complexity of challenges of this transmigration education & training, the implementing organization can not be handled at the existing level of Education and Training of Personnel Center, but it is necessary to establish a Body (Institute) instead of the former center, which should be put directly under the Minister. Also viewing limitation of fund, resources, and existing capability, performance of transmigration education and training should not always be executed by the Department only, but reasonably in cooperation with and utilizing of other institutions of education & training of the Government sector, Universities and also institutions of self-work (swadaya) populations.

3. Issues of SIAP Fund Utilization

The existance of an exceeding SIAP (unexpended development balance) is due to a weak program planning and also project budget planning, which was executed up till now. Planning involving location of settlement was offer cashly performed without following the necessary phases, due to pursue of fa

mily targets which had to be reached and by the physical work cycle of the project.

Characteristics of the project as an estafet and multi-years are oftenly not in line with planning of project and annual budget. And this is also due to non-existancy of an integrated planning, f .i. through the Principal Development Plan of Transmigration, it is therefore difficult to perform a syn - chronized and coordinated activity of transmigration with other departments and agencies.

Another aspect is the mechanism and working method of the departmental instrument which is still in effect, according to both KEPMEN No. 074/1983 and KEPMEN No. 01/1985 are still showing weakness and cause various interpretations so that the line of competence, responsibility, and communication between several officials and organizational units are becoming less clear and less effective. Further still no well functioning of a nominating system and evaluation of program implementation.

Shortcomings of the performing instrument of the Dep. Trans. especially those in the regions are not adequately skilful to manage development projects efficiently, and there are also symptoms of unsuffiecient motivations to perform their duties properly, causing many activities of the project not timely being accomplished. These problems of personnel motivation are related to working conditions and also management system, which are lacking of incentives while there are no sufficient resolute sanctions for those neglecting field duties.

On the other hand, there are also contractors of transmigration projects not adequately fulfilling requirements. And weakness in tender systems, futher remoted locations and not to forget controlling system in the field are all causing un

finished projects, both in time and quality or results for below standard. SIAP of the Dep. Trans. will therefore heavily be affected.

The Management of Dep. Trans. should approach more specifically, and also cooperate closely with BAPPENAS and D.G. Budgetting, to obtain DIP Revision, so that utilization of SIAP fund could properly be shifted to targets which are more realistic and more efficient.

It is further also be suggested to draft a Pattern of Transmigration Program Financing as part of the Principal Plan System, whereby the financing pattern will also cover efforts of handling problems of self-initiating transmigration and participation of the private sector.

Considering the scope and complexity of the three problem grouping, which were studied in the first phase, the counterpart Consultant and PT. REDECON Team suggested that in the next consultation phase steps to be taken should go through four lines of actions follows:

First, departing from KEPMEN No. 160/MEN/SJ/1984 with respect to the Team of Organizational Perfection of Dep. Trans. providing assistance in taking up urgent issues involving internal organization and main duties of Dep. Trans. especially :

1. Drafting of policy suggestions to the Minister of Transmigration for perfection of KEPMEN. Trans. No. 055A/MEN/1983 regarding Organization and Working method of Dep. Trans. and perfections of KEPMEN No. 074/1983 with respect to Principals of Work Mechanism of Dep. Trans., and KEPMEN No. 01/1985 regarding Formation of a Government Material & Equipment Purchase Controlling Team.

2. Drafting of policy suggestions to the Minister of Transmigration to perform a proper implementation of KEPPRES No. 59/1984 Coordination of Transmigration Performance.
3. Activities of item 1 and 2 above to be executed, noticing other provisions, inter alia Constitution No. 3/1972; Government Regulations 42/1973; Constitutions No. 5/1976, No. 11/1967, No. 12/1967; KEPPRES 44/1974 and No. 15/1984.

Second, to continue efforts of bridging and assistance to take up issues of inter-departmental relationship relevant to inter-sectoral performance of transmigration and selectively directing policies to a case of areal development of a certain area in Kalimantan or East Indonesian areas while noticing regulations and law as stated in the first item above.

Third, to provide assistance in solving actual problems faced by Dep. Trans. in the field, especially to pioneer performance of ideas of the Minister of Transmigration regarding "pattern of integrated transmigration and settlement" in a case of a sample area of transmigration.

Fourth, to formulate coverage space, characteristics, directive objective and priority of research programs and developmental in the transmigration sector, and assist in drafting of a Principal Plan of Transmigration Development for a period of 15 to 20 years Drafting of such Principal Plan will also cover a Pattern of Transmigration Program Financing including financing of self-initiating transmigrant and participation of the private sector.

REDECON
REPORT.

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FUNDAMENTAL RESUME

This report presents the results fo reconnaissance phase of the Counterpart Consultant Minister Transmigration and PT. REDECON Consultant Team to obtain an illustration of main issues and a series of suggestions on policies of the trans migration sector. A great deal of which was intended for a much more increase of capability of the Transmigration Department in carrying out main duties to attain objective of transmigration performance and a series of transmigration program targets in Repelita IV.

As observed by the Counterpart Consultant and PT. REDECON Team, the Dep. Trans. Management is now suddenly confronted with two serious problems, which are:

First, problems related to achievement of quantitative targets in Repelita IV, of numerous extent and other targets related to quality developing of settlement and living standards of the transmigration community.

Second, issues related to an orderly set up of the new Department organization and consolidation of State instruments for a more increased capability in executing todays main duties of the Transmigration Department as a basis for future implementation, especially Repelita IV.

In accordance with TOR, the Counterpart Consultant and PT. REDECON Team, in the first phase of this Study Report, will focus attention upon three problem grouping i.e.:

First, relevant aspects and within organizational scope and management of the Transmigration Department.

Second, human resources and supporting means to execute main duties of the Transmigration Department.

Third, financing problems and utilization of development budget funding mainly the SIAP (unexpended Development Balance) funding in the Transmigration performance.

FUNDAMENTALS AND THE OBJECTIVE OF POLICIES IN THE TRANSMIGRATION SECTOR.

These three grouping of problems mentioned above was then studied by the Counterpart Consultant and PT. REDECON Team by utilizing a macro analysis framework and objective of Government policies development in the transmigration sector and various opportunities and also constraints in future implementation of the transmigration program. The results of above study concluded a summary of main problems and objective of policies as follows :

- First : transmigration as a national program and strategically in the implementation of the program and other national priorities. Both Guidelines of state Policies and Provisions of Law provided a formal basis for performance of transmigration and at the same time provided also limitations of scope of activities and objective of implementation of transmigrations.
- Second : performance of transmigration faced the reality that external factors were heavily influencing and also causing limitations upon scope of activity and objective of implementing transmigration. Development of the external factor such as "commodity-boom" and mainly "oil-boom" sixties to seventies, provided a financial opportunity for the implementation of transmigration on a large scale. However, future prospects especially the implementation of Repelita IV, and the availability of development funding and projected settlement area "ready-for-use", is estimated to be confronted with key constraints in the implementation of transmigration.

- Third : Setting up and implementation of the transmigration program, should be based upon calculating areal lay-out structure, environmental condition, and pattern and objective of regional development so that natural resource potentials (land, water) could be more utilized for social security of the community in the area concerned. Viewing that Sumatra is already entering an era of satiation for food pattern, future plans should be worked out to utilize the central and eastern part of Indonesia for the implementation of transmigration programs.
- Fourth : Carrying out main duties and challenges of the transmigration program are not to be separated from spot-lighting the capability of State instruments, human resources and today's existing means of the Department of Transmigration. However, today's condition and internal problems of the organization should also be visualized in a perspective of institutional development in the past and also in coordination and interaction with other agencies and departments.
- Fifth : Efforts of orderly arranging organization and working method of the Transmigration Department and increasing the capability of cross sectoral coordination are still pressing and need to be adjusted to requirements of implementing main duties and achievement of transmigration targets. Important to encourage self-initiating transmigrant, participation of the private sector, and self-efficient community institutions for future implementation of transmigration viewing an increasingly limitation of personnel recruitment, physical supporting means and other governmental resources.

Findings of Counterpart Consultant and PT. REDECON Team.
 Weak components of the organization: working pattern & personnel formation of Dep. Trans. prior improvement and increase of capability necessary before expanding the organization and also a requirement for increasing inter-departmental coordination. Due to an ever increasing complexity of duties and challenges faced by Dep. Trans. in Repelita IV, necessary to carry out re-orientation of policies in the transmigration sector, included inter-alia adjustment to standards and targets which should be achieved. So, problems of orderly arranging the organization, developing capability of instruments and human resources, and utilization of budget fund available for the transmigration program may now be implemented based upon strategy of selective objectives, whereby whether constraints and opportunity exist are calculated, both internal or external.

Basic findings of the Counterpart Consultant and PT. REDECON Team relevant to the three problem grouping mentioned above.

1. Arrangement of Organization and Management Planning System.

One of the stagnation in performance of the transmigration program :

An existing planning system still inadequate or non-existence of an integrated transmigration development plan. Considering the scope of transmigration activities, which always require an integrated cross-sectoral approach, demand the existence of an accurate planning process, efficiently, and in accordance with required time dimension.

The same with dimension of objective of transmigration as outlined in the Guidelines of State Policies, indicating development level intended to achieve. And also operational targets of Repelita except its extent and exceedingly stressing quantitative targets (the number of total families and such alike), it is also necessary to formulate more selectively and require other norms which would not neglect "settlement standards" and "living standards" of transmigrant and

and the surrounding population.

A more selective policy needed, due to increasingly limitation of development funding, natural resources and also available manpower, to achieve Repelita IV targets. Scale of Priority and Strategy of concentration should be established, clearly and consistently, and all this will be met if there is a reorientation of policies and a proper and adequate planning system.

Fundamental of Organizational Law and Working method of the Department Organization Structure and Working Method of the Transmigration Department still in effect is arranged under KEPMEN (Ministerial Decree) No. 055A/Men/1983 while principles of working mechanism of the Department are arranged under KEPMEN No. 074/Men/1984. Relationship between the two Decrees mentioned need a more detailing and more adjustable to KEPPRES (Presidential Decree) No. 44/1974 and to be related with KEPPRES No. 59/1984 regarding coordination of Transmigration Performance. In this respect, the Counterpart Consultant and PT. REDECON Team concluded that KEPMEN No. 160/MEN/SJ/1984 reference Organizational Perfection Team of the Transmigration Department is an effective step and necessary to strengthen its implementation for immediate improvement of existing shortcomings and weaknesses in above Ministerial Decree.

Main Duties and Organizational formation fo the Department. Prior to becoming a Department, organizational units and structure has been changed frequently, yet no development of an institutional pattern of management and working mechanism, therefore efforts of strengthening the organizational formation and increasing of efficiency and operational capability of the Department, apparently needs to be undertaken in advance prior to executing expansion of instruments and organization of the Transmigration Department.

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Due to a future increase of function & role of the Personnel Education & Training Center and the Research & Development Center, adequate measures should be taken, especially viewing that requirements for increasing human resources in instruments of the Department and also of the transmigrant community in the regions, become more and more important and an ever growing need of those requirements.

Main Duties of Terrace (Essential) officials of the Department.

Ministerial Decree (KEPMEN) No. 074/1984 stated that Directorates General of the Dep. Trans. do not have a vertical (commanding) line to organizational units of the Dep. Trans in the regions. This commanding line, directly connecting units vertically is in the hands of the Minister, and in practice above operational technical competence will be carried out by the Secretariate General, who in practice will take receipt of and process reports from the regions and perform monitoring and evaluation of regional projects.

Partial competence, technically operational at the disposal of the Secretariate General while the Directorate General has only technical competence, is now considered functionally less efficient, while formally above stipulations is also less conformable to provisions of KEPPRES No. 44/1974 and KEPPRES No. 15/1984.

Management system and working method

Generally viewed management system and working method in circles of the Dep. Trans. have still not reached its optimum compared to main duties and challenges to be faced in Repelita IV.

This weakness of management, in principle is a result of the reality that the Deptrans as a newly established Department is still in its process of searching and finding a form of system and pattern of efficient management.

And even this process of searching an efficient form experienced many difficulties due to a number of factors.

First, due to the existence of some weakness in management system and working method effective for the Dep. Trans., namely KEPMEN No. 074/Men/1984 and also KEPMEN No. 01/Men/1985.

Second, due to an exceeding urge in pursuing quantitative results/targets of Repelita IV and also in pressing down total SIAP so that interests and efforts needed to be exerted for building up a management system and development of an institutional capability of the Dep. Trans. became less.

Third, what is more sectoral crossing (diagonally) characteristics and integrated transmigration activities strive for the availability of sufficient manpower and advanced capability of management.

Fourth, still no adequate monitoring system and evaluation of program implementation and transmigration project.

Inter-departmental Coordination.

The inter-departmental relationship is an outstanding aspect in the implementation of transmigration program due to carrying out main duties of the Dep. Trans. is not only on its own but closely related to performing main duties of some agencies and other Departments. And in this respect, till now in performing transmigration program, conflicts still exist with the implementation of Departments concerned. Conflicts or also obstacles of accelerating inter departmental coordination involve whether planning, program implementation or factor instruments.

A main source of conflicts are the provisions of law, specifically the Constitution arranging main duties of each Department. Another conflict involves issues of land use for several requirements, including for transmigration.

And another one, conflicts derived from perception of function and role of the Dep. Trans. in the national development. Those conflicts indicate that the target of coordinating performance of transmigration should be more adaptable to the objective stipulated in the Guidelines of State Policy (GBHN).

Although such issues of inter-departmental coordination are arranged in KEPPRES No.59 the year 1984, except the non-availability of an implementation manual (Juklak) of above KEPPRES a directive coordination of implementing the transmigration program should also be undertaken to solve those three sources of conflicts.

2. Development of Human Resources

The developmental of Human Resources is a centralized problem, which is now faced by the Dep. Trans. Efforts of solving above problem are not to be separated from arranging the organization and departmental management, and also applicable for the objective of program and selective targets in the reorientation of future policies which are to be followed.

Requirements and Planning of Personnel

Manpower needs assessment necessary for the performance of the transmigration program, and perfection of recruitment system, selection and placement of Dep. Trans. personnel should be moreadjusted to requirements of each organizational unit and task/function, and development of future conditional demand. Drafting of a "job description" for each functional position is also a must and an implementation manual for tasks, competence and responsibility of all personnel concerned.

Dep. Trans. should also initiate pioneering of efforts toward manpower planning in building up career, profession and institutional capability needed by the department to ca

rry out main duties.

Education and Training

Except other existing times, through effective programming of education and training Dep. Trans. should not only focus above program on its own circles but also apply to the transmigrant community in regions becoming more extensive.

Apart of what has been achieved, a shortage still exist in volume and capability. Furtherly, organization, instructors, system and curriculum of education and training still needs perfections besides relevant means should be build and upgraded in accordance with an increase of needs. However, most important is the objective and target of education and training should be more detailed in its purpose according to reorientation of new policies to be followed.

Viewing its scope and complexity of challenges of this transmigration education & training, the implementing organization can not be handled at the existing level of Education and Training of Personnel Center, but it is necessary to establish a Body (Institute) instead of the former center, which should be put directly under the Minister.

Also viewing limitation of fund, resources, and existing capability, performance of transmigration education and training should not always be executed by the Department only, but reasonably in cooperation with and utilizing of other institutions of education & training of the Government sector, Universities and also institutions of self-work (swadaya) populations.

3. Issues of SIAP Fund Utilization

The existance of an exceeding SIAP (unexpended development balance) is due to a weak program planning and also project budget planning, which was executed up till now. Planning involving location of settlement was offer cashly performed without following the necessary phases, due to pursue of fa

mily targets which had to be reached and by the physical work cycle of the project.

Characteristics of the project as an estafet and multi-years are oftenly not in line with planning of project and annual budget. And this is also due to non-existancy of an integrated planning, f .i. through the Principal Development Plan of Transmigration, it is therefore difficult to perform a syn - chronized and coordinated activity of transmigration with other departments and agencies.

Another aspect is the mechanism and working method of the departmental instrument which is still in effect, according to both KEPMEN No. 074/1983 and KEPMEN No. 01/1985 are still showing weakness and cause various interpretations so that the line of competence, responsibility, and communication between several officials and organizational units are becoming less clear and less effective. . Further still no well functioning of a nominating system and evaluation of program implementation.

Shortcomings of the performing instrument of the Dep. Trans. especially those in the regions are not adequately skilful to manage development projects efficiently, and there are also symptoms of unsuffiecient motivations to perform their duties properly, causing many activities of the project not timely being accomplished. These problems of personnel motivation are related to working conditions and also management system, which are lacking of incentives while there are no sufficient resolute sanctions for those neglecting field duties.

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UNITED NATIONS DEVELOPMENT PROGRAMME

PROJECT OF THE GOVERNMENT OF

INDONESIA

PROJECT DOCUMENT

Title : Support to Monitoring and Evaluation of Transmigration
Number : INS/84/003/A/01/99 Phase II
Duration : Two and half a years (30 months)
Primary Function : Direct Support
Secondary Function : Institutional Building
Sector : General Development Issues, Policies and Planning (02)
Sub-Sector : Development Strategies, Policies and Planning (021)

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Munir S. Haryono

Government Implementing Agency: This project is to be executed by the Government, in co-operation with the United Nations Development Programme. For the purpose of execution the Government will be represented by the Ministry of Transmigration and UNDP will be represented by the Resident Representative.

Proposed Starting Date : 1 January, 1986
UNDP Input : US \$796,698
Government Input : Rp.238.200.000,-
Approved:

on behalf of the Government

Date

on behalf of the United Nations Development Programme

Date

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PART I
LEGAL CONTEXT

This project document shall be the instrument (therein referred to as a plan of operation) envisaged in Article I, Paragraph 2, of the Agreement between the Government of Indonesia and the United Nations Development Programme concerning assistance under the special fund sector of the United Nations Development Programme, signed by the parties on 7 October, 1960 and endorsed in a letter from the Minister of Foreign Affairs dated 25 January, 1967.

PART II
THE PROJECT

A. Development Objectives:

Transmigration is aimed at a balanced distribution of population particularly outside Java and Bali through opening up and developing new lands in the outer islands. As it is considered a programme for helping the disadvantaged rural population in the densely populated areas the government has accorded high priority to it. The project is to improve the management of transmigration through monitoring and evaluating its implementation.

B. Immediate Objectives:

- (i). Establishing a system by which monitoring of key aspects of the transmigration programme is possible;
- (ii) Improvement in ^{in men} the reporting system from project managers, district officers, and Provinces to the Planning Bureau; 270
- (iii) Evaluation of important areas of transmigration activities;
- (iv) In-service training to the staff involved in planning, monitoring and evaluating the transmigration programme; and
- (v) Setting up an efficient storage and retrieval system for monitoring and evaluation.

C. Background and Justification:

1. Background:

The great disparity and imbalance in the distribution of population in relation to available land and natural resources has been of major concern to the Government since independence. The Government has embarked on a programme for the transmigration and resettlement of the most disadvantaged rural population in heavily populated areas to new sites where better conditions for social and economic development exist. The transmigration programme entails skillful efforts in technical and human inputs from various government departments, agencies and institutions. Since its inception large numbers of disadvantaged rural people have been resettled. During the First Five-Year Development Plan (1969-1974) 6,000 families (KK) were settled, 55,000 KK during the Second Plan (1974-1979), and 553,474 KK were settled during the Third Plan (1979-1984). During eighteen months of the Fourth Five-Year Development Plan (1984-1989), the Government has settled 177,891 KK of the planned target of 750,000 KK plus the resettlement of 810 KK from the Third Five-Year Development Plan.

In February, 1983, due to the increasing scale of the programme, a Ministry of Transmigration was established and the former Junior Minister became the Minister. According to the Presidential Decree No. 59 of October 16, 1984 on the Co-ordination of Transmigration Operations "that the transmigration operations shall be the task and responsibility of the Minister of Transmigration and they shall be performed in an integrated and co-ordinated manner with other Ministries and Government institutions whose task and functional scope is related to transmigration operations, i.e. the Ministry of Home Affairs, the Ministry of Public Works, the Ministry of Agriculture, the Ministry of Health, the Office of the State Minister for Population and Environment, the Office of the State Minister/Chairman of the National Development Planning Board (BAPPENAS), and other Government institutions deemed similarly related." It should be further noted that after the creation of the new Ministry in 1983 the internal organization of the Ministry was still in evolution. The Organizational Chart of the Ministry of Transmigration is attached in Appendix I.

Presently, the Ministry of Transmigration has a total of 11,429 employees, of which 1,852 are assigned at the central headquarters and 9,577 are in the regions. In addition, a total of 8,830 employees are engaged on a contractual basis of whom 1,096 are at the central headquarters and 7,734 are in the regions. Among the problems the most important is the shortage of capable personnel to implement the main assignment of the ministry according to the targets in the IVth Five-Year Development Plan.

The international community has shown great interest in the programme. Support to the Government was extended through both technical and financial assistance. More than US\$700 million in loans and grants were provided to date. UNDP assistance to the Transmigration Programme started with Project INS/72/005 (Planning and Development of Transmigration Schemes) from 1972 to 1978. In 1978, following the recommendation of a joint UNDP/UNDTCD/FAO Mission, the Government and UNDP decided to include four new UNDP-assisted projects in the Second Country Programme.

Those were Projects INS/78/012 (Operational Support to Transmigration Schemes), INS/79/001 (The Transmigration Management and Monitoring Project), INS/80/009 (Support to Training for the Transmigration Programme), INS/80/006 (Coordination of Technical Cooperation Activities for Transmigration Programme). On the termination of the project INS/80/006 UNDP and the Government approved a small scale Preparatory Assistance Project, INS/84/003 (Support to Planning the Systematic Monitoring and Evaluation of Transmigration). The primary objective of the project was to prepare a project document for strengthening the planning, monitoring and evaluation of the Ministry of Transmigration. The Government and UNDP have allocated funds for technical assistance to the transmigration programme in the Third Country Programme Management Plan. This project proposal, therefore, is a direct output of INS/84/003 and represents the requested future assistance to be provided by UNDP during the coming three years period (1986 - 1988).

It is noteworthy that much progress was achieved during Repelita III. However, various difficulties in planning, monitoring and evaluating the programme, both technical and non-

technical in nature, still need to be overcome. It is against this background that the Ministry of Transmigration is continuously adjusting its organizational structure and priorities to deal more directly with the above problems. In dealing with this problem during Repelita IV, the Ministry of Transmigration has embarked on a new integrated approach for a more comprehensive and effective system for planning, monitoring and evaluation. This project is expected to assist this national effort.

2. Justification:

The size and task of the transmigration programme, coupled with the shortage of technically trained and experienced manpower within the Ministry of Transmigration has resulted in that execution of many aspects of the programmes has been given to other governmental agencies, consulting firms and contractors. In order to ensure proper planning control and phasing of these activities, it is necessary to enhance the technical capability of the Ministry of Transmigration's overall planning, monitoring and evaluation system.

The Ministry is still in the process of adjusting its organizational structure and work procedure, but the shortage of well-trained and experienced staff is unlikely to be remedied in the near future despite the bold efforts underway to recruit technical staff and expand training activities at all levels. For the foreseeable future, reliance on national consultants/experts as well as expatriate staff and funds is expected to continue.

The Ministry of Transmigration recognized that one of the constraints in the implementation of the transmigration programme is the absence of an efficient monitoring and evaluation system that can provide information as required on important aspects of the transmigration programme. Accordingly, on the 20th of December 1984 the Minister issued Instruction No.270/MEN/1984 on Reporting the Implementation of the Transmigration Programme. On May 15, 1985 the Minister also sent a letter of instruction to all transmigration project managers with forms for reporting the implementation of the transmigration programme at various times and stages of development. This letter of instruction makes it necessary for the provision of

physical and financial resources, both national and international, in addition to the existing staff for monitoring. The present system of monitoring is mainly based on reporting by the project managers to the headquarters. Although the regional staff is also assigned the responsibility of reporting, they are not given due importance despite the fact that they constitute the most important link between the settlement projects and the headquarters. As the number of settlement projects located in each of the regions is increasing it would be better to entrust the responsibility of coordinating the reports of the project managers with the respective regional transmigration office and to provide them with adequate financial resources for integrating the reports and transmitting them to the headquarters.

There exists a computerized monitoring system for tracking transmigrants movements. In order to provide effective feedback to planning, monitoring and coordination activities, it is desirable to expand and enhance this facility to cover all relevant technical information which would include land resources data, agricultural production, the supply of farm inputs and credits, the condition of the settlers, etc.; the reporting should not only record the numbers of transmigrants returning to their places of origin but also the reasons for their so doing, and other pertinent data. What is now also required is the consolidation and centralization of the system at the regional and headquarters levels whereby all useful technical/non-technical activities being carried out by directorates, centres and projects can be monitored and evaluated in a timely manner for improving the performance of overall transmigration programme.

Project INS/80/006 (Co-ordination of Technical Co-operation Activities for Transmigration Programme) had concluded that the Ministry of Transmigration should take the required measures to strengthen its planning and monitoring mechanism. A consultant to the project from FAO-Rome, has endorsed the project's conclusions and recommendations. The most significant are the following:

- i. The coordination of technical cooperation assistance to the transmigration programme should be further strengthened. Special consideration should be given to planning such assistance taking into account the complexity of the transmigration programme.
- ii. An efficient coordinating mechanism could only function as the part of a planning apparatus. Planning is a continuous exercise requiring constant adjustments. Constant monitoring to support and assist in reaching adequate planning decisions was of great importance.
- iii. Coordination of technical cooperation assistance should be complimentary and linked with a coordination mechanism covering all elements of the transmigration programme, particularly the provision of continuing institutional arrangements.
- iv. The Bureau of Planning was a strategic unit of the Ministry of Transmigration. Its function should be extended and strengthened. Special consideration should be given to the linkages of planning with monitoring programmes and evaluating its implementation. The Bureau's functions should expand to cover activities in the regions and ultimately to projects.
- v. Permanent staff assigned to the Bureau of Planning should have the experience and capacity to deal with this function. Efforts should be made to avoid assigning important planning and monitoring tasks to temporarily appointed consultants.
- vi. Suitable financial resources should be earmarked by the Ministry for strengthening and supporting the operation of a planning and monitoring structure suitably staffed both at the headquarters and in the regions.
- vii. Assistance in the operation of a monitoring and evaluation system linked with the Bureau of Planning was urgently required as a follow-up to the project.
- viii. The UNDP, due to its long history in assisting technically and in a selfless manner the transmigration programme, is the most suited agency to provide such assistance as an immediate follow-up to the project.

This project is for the purpose of assisting the Ministry of Transmigration in strengthening the planning and monitoring structure for more effective implementation of its activities. This project is further intended to improve the system of monitoring for all projects in the Ministry of Transmigration.

D. Special Consideration:

The programme would improve the living conditions of the transmigrants and the surrounding communities. The beneficiaries of the transmigration programme are mostly the rural poor, largely consisting of small/landless peasants and agricultural labourers from densely populated regions local population or from areas where production resources, infrastructures and other supporting services are needed.

The project will be as far as feasible concerned with the goals that have been established on a global basis by the governing council of the United Nations Development Programme (UNDP), that is improving rural poverty, generating employment, improving the living standard of the small farmers, fishermen and the development of appropriate technology, etc., to ensure that benefits are shared by the the poorer sections of the society. The core personnel of the ministry staff assigned to the project will benefit from the national/international experts assigned to the project, and expertise and experiences of selected countries through the UN system having similar programmes.

E. Project Outputs:

- i. A framework and the description of the present planning and monitoring system in the Ministry of Transmigration, indicating the structure of the system, staff function at the headquarters and their inter-linkage with various directorates on one hand and with the regional set-up. on the other. The report will analyze the capacity of the system in carrying out overall planning and monitoring of the transmigration programme giving particular importance to the reporting from regional offices, district offices and settlement projects.

- ii. A manual suggesting measures for gradually reinforcing the planning and monitoring system with respect to the organization and operation of the system at the headquarters, regional and project levels.
- iii. Preparation of a national programme of monitoring system.
- iv. In-service training for the counterpart staff and visits to countries such as Malaysia, Sri Lanka etc where monitoring of settlement activities is carried out.
- v. Provision of carrying out evaluation studies.
- vi. Produce six-monthly progress reports, and a final report on project findings, achievements and recommendations.

F. Activities:

- i. Review the present planning and monitoring system in the Ministry of Transmigration giving particular emphasis to the examination of the structure of the system, available staff at the headquarters and their interlinkage with various directorates of the ministry;
- ii. Assist in scrutinizing all forms issued to the regional transmigration offices and project managers with a view to make them more relevant and realistic;
- iii. Assess the extent to which the information collected from below has been analyzed at the headquarters and evaluate the manner in which the existing system has been taken into account in the planning of transmigration programme;
- iv. Organize workshops of the headquarters staff, programming divisions of regional transmigration offices, district offices and project units in order to resolve the practical problems experienced by them and to arrive at a uniform approach towards the use of data for building up a strong base for planning;

- v. Work out measures for reinforcing the planning and monitoring system taking into account the need for giving more responsibilities in this regard to the Regional Transmigration Offices and the District Transmigration Offices;
- vi. Identification of the modalities and instruments for monitoring the performance in an improved system;
- vii. Integration of existing list of items for which data should be collected by the Regional Transmigration Offices and the District Transmigration Offices.
- viii. Suggest the types of reports, their frequency and procedures for report analysis;
- ix. Improve the existing computerization of data collection and analysis;
- x. Carry out evaluation activities;
- xi. Provide fellowships for 11 staff members of the Ministry of Transmigration in undergo training in monitoring and evaluation activities.

G. Inputs:

1. Government Inputs:

- (1) National Project Director;
- (2) Nine Senior Government Counterparts full time;
- (3) Office accomodation, furniture, equipment and supplies;
- (4) Fuel and maintenance for project vehicles and equipment;
- (5) Travel cost for internal travel within Indonesia for national/international project personnel;
- (6) Sufficient funds for running training courses provided in the project document;
- (7) Administrative Assistants (2);
- (8) Four project drivers;
- (9) Sufficient funds for such miscellaneous expenses as may be incurred during the course of the implementation of the project;
- (10) Documentation photographs and reports relevant to the project.

Additionally, the Government is responsible for providing participants, executors, and fund for:

- Phase I : The Programme Division of Regional Offices and District Offices 50 participants annually;
- Phase II : The Section Heads of Monitoring and Reporting of Regional Offices and Heads of Settlement Units, 50 participants annually for each workshop.

The total employees to be trained during the life of the project is 250. The cost annually is Rp.25,000,000 for the participants' accommodation. This fund will be supplemented by UNDP as indicated below under In-service Training.(3 b)

2. UNDP Inputs:

It is anticipated that the incumbent international and national staff will be retained in their respective position as specified in the budget. The recruitment of additional international and national personnel will be conducted also according to the wishes of the GOI and UNDP. All international and national personnel activities in Indonesia will be co-ordinated by the National Project Director. The positions to be filled are indicated below.

International Personnel

- (1) Senior Adviser for 30 months by Sub-Contract, FAO;
- (2) International consultants for 3 months will be provided by FAO;
- (3) Three UN Volunteers:
 - Agriculturist/Monitoring
 - Economist/Evaluation
 - Computer Programmer/Data Processing
 - Total 66 man-months from UNV Office, Geneva;
 - UNDP to recruit from UNV Office, Geneva.

National Personnel

- (4) Planning Specialist for 30 months;
- (5) Monitoring Expert for 24 months;
- (6) Data Processing Expert for 24 months;
- (7) Evaluation Expert for 24 months;
- (8) Technical Programme Assistant for 36 months;
- (9) One bilingual Senior Secretary for 30 months;

Cont / (10) One typist for 36 months;

(11) One driver for 30 months;

In addition, the UNDP will cover the daily subsistence allowance costs relating to the in-country travel of international personnel assigned to the Project on either a long or short term basis. The terms of reference/job descriptions of the UNDP personnel inputs are in Annex 2.

3. UNDP Financed Training Activities

The UNDP will cover the international travel, maintenance fees of study tours, fellowship and other award holders (7 nominees) to undertake specialized overseas training in the following areas:

(a) Individual Fellowship

- Computer applications (1);
- Project analysis and implementation (1);
- Project evaluation (2);
- Management of agricultural cooperatives (1);
- Financial Management (1);
- Personnel Management (1);

for a period of 2 - 12 weeks.

In addition, UNDP will provide fellowship to 1 nominee for a period of nine months. The total cost is estimated at US\$70,000.

(b). In-service Training.

In-service training will be provided annually through workshops for Headquarters, regional, district personnel involved in monitoring and evaluation of the transmigration programme. UNDP will cover the cost of:

- Curriculum development;
- Preparing graphic and audio visual teaching aids;
- Stationery and other materials;
- Reproduction and printing;
- Other costs.

The cost for in-service training is estimated at US\$20,000 for the first year, US\$15,000 for the second year and US\$7,500 for the third year. Total cost is US\$42,500.

(c). Study Tours.

Two study tours will be provided for counterpart staff, individually or group, within the appropriate regions of the world to observe large-scale rural development settlement - Monitoring and Evaluation in Malaysia, the Philippines or similar countries, at an estimated cost of US\$20,000.

4. The UNDP will cover the purchase and shipment cost of duty-free vehicles and equipment listed in Annex 4 including books and technical reference on Planning; Monitoring and Evaluation for the Bureau of Planning library.

H. Preparatory Work Plan:

The detailed work plan for the implementation of the project will be prepared jointly by the National Director and the Senior Adviser within one month after the signing of the document. The work plan will be up-dated periodically during the lifetime of the project in light of emerging changes in activities, and will be considered as part of the project document.

I. Preparation in the Framework for Effective Participation of National and International Staff on the Project:

The project activities will be carried out jointly by the national, international and full-time senior counterpart staff assigned to the project.

J. Development Support Communication:

The project is focused on assisting the Ministry of Transmigration in strengthening its monitoring and evaluation activities of the transmigration programme which is by nature multi-disciplinary, multi-sectorial, inter-departmental intra-governmental. The ministry is attempting to introduce new approaches and to centralize and simplify its monitoring and evaluation system in order to measure progress of implementation, assessing accomplishments of outputs planned, to identify problems and deviations at an early stage and to take

the necessary action to improve the overall quality of the transmigration programme. The project will provide direct support to the Ministry's Integrated Management Information Project to ensure a timely information flow at all levels for decision making and other purposes.

K. Institutional Framework:

The Office of the Secretary General of the Ministry of Transmigration shall be designated as the Government implementing agency for this project. The project will be located in the Planning Bureau of the Ministry of Transmigration. Close collaboration will be maintained with BAPPENAS by the Planning Bureau.

The Planning Bureau will also ensure the full participation of other departments within the Ministry of Transmigration having a section or sub-section for monitoring and evaluation. These departments are listed as: The Directorate General of Settlement Preparation, Directorate General of Mobilization and Development, Inspectorate General, the Centre for Transmigration Training/PUSLATRANS and the Centre for Education and Staff Training/PUSDIKLAT as appropriate. The Planning Bureau will also liaise with other ministries, monitoring departments that are carrying out projects and activities for transmigration development.

A co-operating agency agreement will be entered into between the Government implementing agency and the Food and Agriculture Organization of the United Nations (FAO) under which the Senior Adviser agreement will be continued. UNDP will make the necessary arrangements/contact for the recruitment of the UN Volunteers. International consultants and missions will be provided through FAO, in close consultation with the Government.

A group of core personnel shall be trained on-the-job on improving the design and monitoring and evaluation system which will constitute the senior nucleus staff of the project as contained elsewhere in this document under Government inputs.

L. Prior Obligation and Prerequisites:

The Government of Indonesia will designate the nine national staff from the Ministry of Transmigration to work in the project.

M. Future UNDP Assistance

The project is intended to give assistance to the Ministry in a practical way to strengthen its monitoring and evaluation system. However, the monitoring system will continue beyond the life of this project. It is, therefore, anticipated that future UNDP assistance will be required following the successful completion of this project, at least for the full period of Repelita IV.

PART III

SCHEDULE OF MONITORING, EVALUATION AND REPORTS

A. Tripartite Monitoring Review:

The project will be subject to periodic review in accordance with the policies and procedures established by the UNDP for monitoring project implementation.

B. Evaluation:

The project will be subject to evaluation in accordance with the policies and procedures established for this purpose by UNDP. The organization, terms of reference, and timing of the evaluation will be decided by consultation between the Government and UNDP.

C. Progress and Terminal Reports:

Progress reports will be submitted by the National Project Director prepared jointly by the Senior Adviser and International and National Staff assigned to the Project in accordance with the policies and procedures established for this purpose by the UNDP. Financial and other reports shall be submitted in accordance with policies and procedures manual for Government executed projects.

A terminal report will be submitted to UNDP by the Government implementing agency on completion of the project.

PROJECT BUDGET COVERING UNDP CONTRIBUTION (In US Dollars)

Country : Indonesia
 Project Number : INS/84/003/A/01/99 Phase II
 Project Title : Support to Monitoring and Evaluation of Transmigration

	TOTAL		1985		1986		1987		1988		
	m/m	\$	m/m	\$	m/m	\$	m/m	\$	m/m	\$	
10	<u>PROJECT PERSONNEL</u>										
11	<u>EXPERTS</u>										
11.01	Consultant	3	30,000	0.5	5,000	1	10,000	1	10,000	0.5	5,000
13.00	Administrative Support (3)	96	30,000	6	2,700	36	10,920	36	10,920	18	5,460
14.00	UN Volunteers (3)	66	77,275			12	14,050	36	42,150	18	21,075
15.00	Travel		20,750		2,000		10,000		7,500		1,250
16.00	Other Costs (Mission)		15,000						15,000		
17	<u>NATIONAL EXPERTS</u>										
01	Planning Specialist	30	30,000			12	12,000	12	12,000	6	6,000
02	Monitoring Expert	24	24,000			6	6,000	12	12,000	6	6,000
03	Agriculturist/Data Processing(Training)	24	24,000			6	6,000	12	12,000	6	6,000
04	Evaluation Expert	24	24,000			6	6,000	12	12,000	6	6,000
05	Technical Programme Assistant	36	21,600	6	3,600	12	7,200	12	7,200	6	3,600
19.99	Component Total	303	296,625	12.5	13,300	91	82,170	133	140,770	66.5	60,385
20	<u>SUB-CONTRACTS INTERNATIONAL</u>										
01	Senior Adviser Settlement Development Planning/Monitoring	36	299,573	6	48,373	12	99,480	12	100,480	6	51,240
	Component Total	36	299,573	6	48,373	12	99,480	12	100,480	6	51,240
30	<u>TRAINING</u>										
31	Fellowship, Overseas		70,000				35,000		25,000		10,000
32	In-service Development Monitoring Evaluation System-Workshop/Seminars		42,500				20,000		15,000		7,500
33	Study Tours		20,000				10,000		10,000		
	Component Total		132,500				65,000		50,000		17,500
49.00	<u>EQUIPMENT</u>		53,500		1,000		45,000		5,000		2,500
	Component Total		53,500		1,000		45,000		5,000		2,500
59.00	<u>MISCELLANEOUS</u>										
	Sundries		14,500		2,000		5,000		5,000		2,500
	Component Total		14,500		2,000		5,000		5,000		2,500
99.	UNDP Total Contribution	339	796,698	18.5	64,673	103	296,650	145	301,250	72.5	134,125

INS/84/003

Support to Monitoring and Evaluation of Transmigration

SCHEDULE OF ADVANCES

US \$

- A. FUNDS ADVANCED TO DATE

- B. FUNDS TO BE ADVANCED IN FORTHCOMING 12 MONTHS
 - i. To Government:

<u>Date</u>	<u>Amount</u>
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Total

- ii. To Co-operating Agency

- iii. Funds to be Advanced in Subsequent Period

TOTAL ALLOCATION PER PROJECT BUDGET (LINE 99)

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GOVERNMENT CONTRIBUTION (Rp. 000 and in kind)

Country : Indonesia
 Project No. : INS/84/003/A/01/99 Phase II
 Project Title : Support to Monitoring and Evaluation of Transmigration

	TOTAL	1986	1987	1988
10. <u>PROJECT PERSONNEL</u>	m/m	Rp. m/m	Rp. m/m	Rp. m/m
01. Head of the Planning Bureau	30	12	12	6
02. Head of Int. Coop. Division	30	12	12	6
03. Head of Reports and Data Preparation	30	12	12	6
04. Head of Sub Div. Multilateral Coop.	30	12	12	6
05. Head of Sub Coord. for UNDP Project	30	12	12	6
06. Director of Bina Program RAHBIN	30	12	12	6
07. Director of Bina Program PANKIM	30	12	12	6
08. Staff of Int. Coop. Division	30	12	12	6
09. Head of Section Planning & Programming of Inspectorate General	30	12	12	6
13. <u>SUPPORT PERSONNEL</u>				
01. Technical Staff	30	12	12	6
02. Administrative Staff (2)	60	24	24	12
03. Drivers (4)	120	48	48	24
15. <u>TRAVEL</u> (in-country)				
National and International Staff		25.920	25.920	25.920
19.99 Component Total	480	192	25.920	192 25.920 96 25,920
30 <u>TRAINING</u>				
31 National Workshop Six - Two yearly			25.000	25.000 25.000
39 Component Total			25.000	25.000 25.000
49 <u>EQUIPMENT</u>				
01 Office Equipment			4.150	4.150 4.150
02 Office Supplies			3.600	3.600 3.600
59 <u>MISCELLANEOUS</u>				
01 Cost of Operating & Maintenance (4) Vehicles			9.930	9.930 9.930
02 Cost of printing & binding			7.800	7.800 7.800
03 Telephone/Telex/Telegram Cost			3.000	3.000 3.000
99. GOVERNMENT TOTAL CONTRIBUTION :	480	238.200	192 79.400	192 79.400 96 79.400

SENIOR ADVISER

Qualifications

University Degree in Agricultural Economics, Planning related subjects.

Ten years practical experience in managing large scale settlement programmes;

Experience in planning and monitoring of programmes in developing countries.

Term of Reference

- 1) Assist in the preparation of detailed workplan;
- 2) Assist the Director of the Bureau of Planning in the development of a systematic monitoring and evaluation system for improved planning, coordination and implementation of the transmigration programme.

In order to undertake the above task the Senior Adviser should:

- 2.1. Review the present system of planning and monitoring transmigration programme carried out by the Planning Bureau and its linkage with various directorates at the headquarters;
- 2.2. Suggest measures for improving the reporting system;
- 2.3. Assist in the setting up of an improved system linking regional and district transmigration offices and settlement projects;
- 2.4. Assist in evaluation activities to assess the impact of the programme;
- 2.5. Preparation of six monthly progress reports and final report on project findings, achievements and recommendations.

UN VOLUNTEERS

1. AGRICULTURIST/MONITORING

Qualifications

University Degree in tropical agriculture with experience in monitoring of programmes.

Terms of Reference

Work with core team, particularly with the Senior Adviser and national expert on monitoring in the identification of modalities and indicators for agricultural development aspects of transmigration programme.

At the beginning of the assignment prepare detailed activities which should synchronize with overall workplan of the project.

2. ECONOMIST/EVALUATION

Qualifications

Master's Degree in Agricultural Economics or Sociology with experience in evaluation activities to assess the impact of the programme.

3. COMPUTER PROGRAMMER

Qualifications

Should have experience in software development and its application for computers.

Terms of Reference

Work with core team in designing computerized system for storing and retrieval of information and to identify the training requirements of the national staff.

NATIONAL PERSONNEL

1. PLANNING SPECIALIST

Qualifications

Degree in Economics/Agricultural Economics.
Experience in planning agricultural programmes.

Terms of Reference

Work with core team, particularly with the Senior Adviser and national expert on monitoring in the identification of modalities and indicators for agricultural development aspects of transmigration programme.

At the beginning of the assignment prepare detailed activities which should synchronize with overall workplan of the project.

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Qualifications

Should have experience in software development and its application for computers.

Terms of Reference

Work with core team in designing computerized system for storing and retrieval of information and to identify the training requirements of the national staff.

NATIONAL PERSONNEL

1. PLANNING SPECIALIST

Qualifications

Degree in Economics/Agricultural Economics.

Experience in planning agricultural programmes.

Terms of Reference

Examine the national and regional plans of transmigration development during Repelita IV as well as the plans for medium and long term, and critically review its objectives and targets;
Analyze various components of the programme and assist in the preparation of data collection relating to each of the components;
Carry out the in-service training programme.

2. MONITORING EXPERT

Qualifications

Specialization in systems analysis or considerable experience in monitoring of programme;
Suggest improvements in the system linking regional and district transmigration offices of settlement units;
Undertake training programme for the national staff.

3. EVALUATION EXPERT

Qualifications

Degree in Agricultural Economics, Sociology or related subjects.
Experience in evaluation of national programmes or projects.

Terms of Reference

Assist in carrying out evaluation activities on specific aspects of the transmigration programme;
Assist in the training programme for the national staff.

4. EXPERT ON DATA PROCESSING

Qualifications

University Degree in Agricultural Economics or Statistics.
Familiarity with the use of computers.

Terms of Reference

Work with the UN Volunteers on computer programming, the Planning Specialist and the Monitoring Expert and establish a system for data analysis;

Carry out courses for in-service training in data processing and data analysis.

5. TECHNICAL PROGRAMME ASSISTANT

Qualifications

Graduate from an academy or university/institute in Indonesia or abroad.

Experience of at least fifteen years in the field related to the scope of assignment as Technical Programme Assistant.

Terms of Reference

- 5.1. Assist in preparation and composition of reports on development of transmigration projects with foreign assistance, monthly, quarterly and annually;
- 5.2. Assist in formulation of results on matters of discussion on transmigration projects with foreign assistance, attend project meetings and prepare minutes/summaries of the results of the meetings;
- 5.3. Assist and formulate the system of administrative management of the coordination secretariat of transmigration projects with foreign assistance as to monitoring, evaluation and reporting;
- 5.4. Maintain close relationship with the working unit of the Ministry of Transmigration as well as with other agencies for the transmigration programme implementation;
- 5.5. Assist in translation of letters and documents of the projects from Indonesia into English vice versa.